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The relationship between gonadal hormones and
neurocognitive functioning in healthy men and women
and patients with schizophrenia

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degree of Doctor of Philosophy
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Volume II

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Hajek, M., Huonker, R., Boehle, C., Volz, H.P., Nowak, H., Sauer, H. (1997) Abnormalities of auditory evoked magnetic fields and structural changes in the left hemisphere of male schizophrenics--a magnetoencephalographic-magnetic resonance imaging study. *Biol Psychiatry*, 42(7):609-16.

Halbreich U. (1995) Menstrually related disorders: what we do know, what we only believe that we know, and what we know that we do not know. *Crit Rev Neurobiol.* 9(2-3):163-75.

Halbreich U, Kahn L.S. (2003) Hormonal aspects of schizophrenias: an overview. *Psychoneuroendocrinology*, Apr;28 Suppl 2:1-16.

Halbreich, U, Kahn, L.S. (2000) Selective oestrogen receptor modulators--current and future brain and behaviour applications. *Expert Opin Pharmacother.* 1(7):1385-98.

Hallonquist, J.D, Seeman, M.V, Lang M, Rector N.A. (1993) Variation in symptom severity over the menstrual cycle of schizophrenics. *Biol Psychiatry.* 1;33(3):207-9.

Halpern, D.F. (1992) Sex differences in cognitive abilities, 2nd Ed. (Hillsdale, NJ: Erlbaum)

Halpern, D.F. (1997) Sex differences in intelligence. Implications for education. *American Psychologist*, 52, 10, 1091-102.

Halpern, D.F., Haviland, M.G, Killian, C.D. (1998) Handedness and sex differences in intelligence: evidence from the medical college admission test. *Brain Cogn.* 38(1):87-101.

Halpern, D.F. (1996) Sex, Brains, Hands, and spatial cognition. *Developmental Review*, 16, 261-270.

Halpern, D.F & Tan, U. (2001) Stereotypes and steroids: Using a psychobiosocial model to understand cognitive sex differences. *Brain and Cognition*, 45, 392 – 414.

Halstead W.C. (1947). *Brain and Intelligence*. Chicago: University of Chicago Press.

Hamilton, C.J. (1995) Beyond sex differences in visuo-spatial processing: The impact of gender trait possession. *British Journal of Psychology*, 86, 1 – 20.

Hampson, E. (1990) Estrogen related variations in human spatial and articulatory-motor skills. *Psychoneuroendocrinology*, 15, 97 – 111.

Hampson, E., Moffat, S.D. (1994) Is testosterone related to spatial cognition and hand preference in humans? *Brain Cogn.* 26(2):255-66.

Hampson, E. (1995) Spatial cognition in humans: possible modulation by androgens and estrogens. *J Psychiatry Neurosci.* 20(5):397-404.

Hampson, E. (1990) Variations in sex-related cognitive abilities across the menstrual cycle. *Brain Cogn.* 14(1):26-43.

Hampson, E. & Kimura, D. (1992). Sex differences and hormonal influences on cognitive function in humans. In J. B. Becker, S. M. Breedlove, & D. Crews (Eds), *Behavioral endocrinology* (pp. 357-398). Cambridge, MA: MIT Press

Hampson, E. & Kimura, D. (1988) Reciprocal effects of hormonal fluctuations on human motor and perceptual-spatial skills. *Behavioural Neuroscience*, 102, 456 – 459.

Hannay, H.J., Falgout, J.C., Leli, D.A., Katholi, C.R., Halsey, J.H. & Wills, E.L. (1987) Focal right temporo-occipital blood flow changes associated with judgement of line orientation. *Neuropsychologia*, 25, 755 – 763.

Harasty, J., Double, K.L., Halliday, G.M., Kril, J.J. & McRitchie, D.A. (1997) Language associated cortical regions are proportionally larger in the female brain. *Archives of Neurology*, 54, 171-176.

Harris, A.H. (1997) Menstrually related symptom changes in women with schizophrenia. *Schizophr Res.* 17;27(1):93-9.

Harris IM, Harris JA, Caine D. (2002) Mental-rotation deficits following damage to the right basal ganglia. *Neuropsychology*. 16(4):524-37.

Harris B, Lovett L, Newcombe R G, Read G F, Walker R, Riad-Fahmy D (1994) Maternity blues and major endocrine changes: Cardiff puerperal mood and hormone study II. *British Med. Journal* 308: 949-953.

Harris, I.M., Egan, G.F., Sonkkila, C., Tochon-Danguy, H.J., Paxinos, G., Watson, J.D. (2000) Selective right parietal lobe activation during mental rotation: a parametric PET study *Brain*.123 (Pt 1):65-73.

Hartley, A.A., Speer, N.K. (2000) Locating and fractionating working memory using functional neuroimaging: storage, maintenance, and executive functions. *Microsc Res Tech.* 51(1):45-53.

Haskell, S.G., Richardson, E.D., Horwitz, R.I. (1997) The effect of estrogen replacement therapy on cognitive function in women: a critical review of the literature. *J Clin Epidemiol.* 50(11):1249-64.

Hassler, M. (1991) Maturation rate and spatial, verbal and musical abilities: a seven-year longitudinal study. *International Journal of Neuroscience*, 58, 183 – 198.

Hassler, M., Gupta D., & Wollmann, H. (1992). Testosterone, estradiol, ACTH and musical, spatial and verbal performance. *International Journal of Neuroscience*, 65, 45-60.

Hauser, P., Dauphinais, I.D., Berrettini, W., DeLisi, L.E., Gelernter, J., Post, R.M. (1989) Corpus callosum dimensions measured by magnetic resonance imaging in bipolar affective disorder and schizophrenia. *Biol Psychiatry*, 26(7):659-68.

Hausman, M. & Gunturkun, O. (1999) Sex differences in functional cerebral asymmetries in a repeated measures design. *Brain & Cognition*, 41, 263-275.

Hausmann, M. & Gunturkun, O. (2000) Steroid fluctuations modify functional cerebral asymmetries: The hypothesis of progesterone-mediated interhemispheric decoupling. *Neuropsychologia*, 38, 1362 – 1374.

Hausmann, M., Slabbekoorn, D., Van Goozen, S.H.M., Cohen-Kettenis, P.T. & Gunturkun, O. (2000) Sex hormones affect spatial abilities during the menstrual cycle. *Behavioural Neuroscience*, 114, 1245 – 1250.

Hausmann, M, Becker, C, Gather, U, Gunturkun, O. (2002) Functional cerebral asymmetries during the menstrual cycle: a cross-sectional and longitudinal analysis. *Neuropsychologia*. 40(7):808-16.

Heaton R K, et al (1993). Wisconsin Card Sorting Test. Psychological Assessment Resources.

Hedges, L.V. & Nowell, A. (1995) Sex differences in mental test scores, variability, and numbers of high-scoring individuals. *Science*, 269, 41-45.

Heinrichs, R.W, Zakzanis, K.K. (1998) Neurocognitive deficit in schizophrenia: a quantitative review of the evidence. *Neuropsychology*, 12(3):426-45.

Heinz A, Knable M B, Coppola R, Gorey J G, Jones D W, Lee K S, Weinberger D R (1998) Psychomotor slowing, negative symptoms and dopamine receptor availability--an IBZM SPECT study in neuroleptic-treated and drug-free schizophrenic patients. *Schizophr Res*.31:19-26.

Hier, D.B, Crowley, W.F Jr. (1982) Spatial ability in androgen-deficient men. *N Engl J Med*. 20;306(20):1202-5.

Heister, G., Landis, T., Regard, M. & Schroeder-Heister, P. (1989) Shift in functional cerebral asymmetry during the menstrual cycle. *Neuropsychologia*, 27, 871 – 880.

Herlitz, A., Airaksinen, E. & Nordstrom, E. (1999) Sex differences in episodic memory: The impact of verbal and visuospatial ability. *Neuropsychology*, 13, 590-597.

Herlitz, A., Nilsson, L.G. & Backman, L. (1997) Gender differences in episodic memory. *Memory & Cognition*, 25, 801 – 811.

Herlitz, A. & Yonker, J.E. (2002) Sex differences in episodic memory: the influence of intelligence. *Journal of Clinical and Experimental Neuropsychology*, 24, 107 – 114.

- Highley, J.R., Esiri, M.M., McDonald, B., Cortina-Borja, M., Herron, B.M. & Crow, T.J. (1999) The size and fibre composition of the corpus callosum with respect to gender and schizophrenia: a post-mortem study. *Brain*, 122, 99 –110.
- Highley, J.R., McDonald, B., Walker, M.A., Esiri, M.M., Crow, T.J. (1999) Schizophrenia and temporal lobe asymmetry. A post-mortem stereological study of tissue volume. *Br J Psychiatry*, 175:127-34.
- Hill, R.D., Grut, M., Wahlin, M., Herlitz, A., Winblad, B. & Backman, L. (1995) Predicting memory performance in optimally healthy very old adults. *Journal of Mental Health and Ageing*, 1, 57 – 67.
- Hines, M. & Shipley, C. (1984) Prenatal exposure to diethylstilbestrol (DES) and the development of sexually dimorphic cognitive abilities and cerebral lateralization. *Developmental Psychology*, 20, 81-94.
- Hines, M, Goy, R.W. (1985) Estrogens before birth and development of sex-related reproductive traits in the female guinea pig. *Horm Behav.* 19(3):331-47.
- Hines, M, Alsum, P, Roy, M, Gorski, R.A, Goy, R.W. (1987) Estrogenic contributions to sexual differentiation in the female guinea pig: influences of diethylstilbestrol and tamoxifen on neural, behavioral, and ovarian development. *Horm Behav.* 21(3):402-17.
- Hines, M. (1990) Gonadal hormones and human cognitive development. In Balthazart, J (Ed) *Hormones, brain and behaviour in vertebrates. 1. Sexual differentiation, neuroanatomical aspects, neurotransmitters and neuropeptides* (Basel: Karger)

Hines, M. (2000) Gonadal hormones and sexual differentiation of human behaviour: effects on psychosexual and cognitive development. In Matsumoto, A. (Ed) Sexual differentiation of the brain. (Florida: CRC Press)

Hines, M., Chiu, L., McAdams, L.A., Bentler, P.M. & Lipcamon, J. (1992) Cognition and the corpus callosum: Verbal fluency, visuospatial ability, and language lateralization related to midsagittal surface areas of callosal subregions. *Behavioural Neuroscience*, 106, 3-14.

Hines, M. & Sandberg, E.C. (1996) Sexual differentiation of cognitive abilities in women exposed to diethylstilbestrol (DES) prenatally. *Hormones and Behaviour*, 30, 354-363.

Hinkin, C.H., Harduy, D.J., Mason, K.I., Castellon, S.Q., Lam, M.N., Stefaniak, M. & Zolnikov, B. (2002) Verbal and spatial working memory performance among HIV-infected adults. *Journal of the International Neuropsychological Society*, 8, 532 – 538.

Hirayasu, Y., McCarley, R.W., Salisbury, D.F., Tanaka, S., Kwon, J.S., Frumin, M., Snyderman, D., Yurgelun-Todd, D., Kikinis, R., Jolesz, F.A., Shenton, M.E. (2000) Planum temporale and Heschl gyrus volume reduction in schizophrenia: a magnetic resonance imaging study of first-episode patients. *Arch Gen Psychiatry*, 57(7):692-9.

Hiscock, M., Inch, R., Hawryluck, J., Lyon, P.J. & Perachio, N. (1999) Is there a sex difference in human laterality? III. An exhaustive survey of tactile laterality studies from six neuropsychology journals. *Journal of Clinical & Experimental Neuropsychology*, 21, 17 - 28.

Hiscock, M., Inch, R., Jacek, C., Hiscock-Kalil, C. & Kalil, K.M. (1994) Is there a sex difference in human laterality? I. An exhaustive survey of auditory laterality

studies from six neuropsychology journals. *Journal of Clinical & Experimental Neuropsychology*, 16, 423 - 435.

Hiscock, M., Israelian, M., Inch, R., Jacek, C. & Kalil-Hiscock, C. (1995) Is there a sex difference in human laterality? II. An exhaustive survey of visual laterality studies from six neuropsychology journals. *Journal of Clinical & Experimental Neuropsychology*, 17, 590-610.

Hiscock, M., Perachio, N. & Inch, R. (2001) Is there a sex difference in human laterality? *Vggfztfkml journals. Journal of Clinical and Experimental Neuropsychology*, 23, 137 – 148.

Ho, H., Gilger, J.W., Brink, T.M. (1986). Effects of menstrual cycle on spatial information-processes. *Perceptual and Motor Skills*, 63, 743-751.

Hoff, A.L, Kremen, W.S, Wieneke, M.H, Lauriello, J, Blankfeld, H.M, Faustman, W.O, Csemansky, J.G, Nordahl, T.E. (2001) Association of estrogen levels with neuropsychological performance in women with schizophrenia. *Am J Psychiatry*. 158(7):1134-9.

Hoff, A.L, Wieneke, M, Faustman, W.O, Horon, R, Sakuma, M, Blankfeld, H, Espinoza, S, DeLisi, L.E. (1998) Sex differences in neuropsychological functioning of first-episode and chronically ill schizophrenic patients. *Am J Psychiatry*. 155(10):1437-9.

Hoff, A.L., Riordan, H., O'Donnell, D.W., Morris, L., DeLisi, L.E. (1992) Neuropsychological functioning of first-episode schizophreniform patients. *Am J Psychiatry*, 149(7):898-903.

Hoff, A.L., Riordan, H., O'Donnell, D., Stritzke, P., Neale, C., Boccio, A., Anand, A.K., DeLisi, L.E. (1992) Anomalous lateral sulcus asymmetry and cognitive

function in first-episode schizophrenia. *Schizophr Bull.* 18(2):257-72.

Hoff, A.L., Neal, C., Kushner, M., DeLisi, L.E. (1994) Gender differences in corpus callosum size in first-episode schizophrenics. *Biol Psychiatry*, 35(12):913-9.

Hoff A L, Wieneke M H, Kremen W S, Faustman W O, Csernansky J G (2002) Sex Hormones and Cognition: Implications for Schizophrenia. *Biol. Psychiatry* 51, Suppl. 1: 99S.

Hoff, A.L., Sakuma, M., Wieneke, M., Horon, R., Kushner, M., DeLisi, L.E. (1999) Longitudinal neuropsychological follow-up study of patients with first-episode schizophrenia. *Am J Psychiatry.* 156(9):1336-41.

Hogervorst E, Yaffe K, Richards M, Huppert F. (2002) Hormone replacement therapy to maintain cognitive function in women with dementia. *Cochrane Database Syst Rev*;(3):CD003799

Hogervorst E, Yaffe K, Richards M, Huppert F. (2002) Hormone replacement therapy for cognitive function in postmenopausal women. *Cochrane Database Syst Rev*; gg(3):CD003122

Hogervorst E, Williams J, Budge M, Riedel W, Jolles J. (2000) The nature of the effect of female gonadal hormone replacement therapy on cognitive function in post-menopausal women: a meta-analysis. *Neuroscience.* 101(3):485-512.

Hu, S., Pattatucci, A.M.L., Patterson, C., Li, L., Fulker, D.W., Cherny, S.S., Kruglyak, L. & Hamer, D.H. (1995) Linkage between sexual orientation and chromosome Xq28 in males but not in females. *Nature Genetics*, 11, 248-256.

Huber TJ, Rollnik J, Wilhelms J, von zur Muhlen A, Emrich HM, Schneider U. (2001) Estradiol levels in psychotic disorders. *Psychoneuroendocrinology*. 26(1):27-35.

Hugdahl, K. (2000) Lateralization of cognitive processes in the brain. *Acta Psychol (Amst)*. 105(2-3):211-35.

Hughes, C., Kumari, V., Soni, W., Das, M., Binneman, B., Drozd, S., O'Neil, S., Mathew, V., Sharma, T. (2003) Longitudinal study of symptoms and cognitive function in chronic schizophrenia. *Schizophr Res*. 59(2-3):137-46.

Hutchinson, M., Schiffer, W., Joseffer, S., Liu, A., Schlosser, R., Dikshit, S., Goldberg, E., Brodie, J.D. (1999) Task-specific deactivation patterns in functional magnetic resonance imaging. *Magn Reson Imaging*. 17:14, 27-36.

Hyde, J.S. & Linn, M.C. (1988) Gender differences in verbal ability: a meta-analysis. *Psychological Bulletin*, 104, 53-69.

Hyde, J.S., Fennema, E. & Lamon, S.J. (1990) Gender differences in mathematics performance: A meta-analysis. *Psychological Bulletin*, 107, 139 – 155

Iijima, M., Arisaka, O., Minamoto, F. & Arai, Y. (2001) Sex differences in children's free drawings: A study on girls with congenital adrenal hyperplasia. *Hormones and Behaviour*, 40, 99 – 104.

Imperato-McGinley, J., Pichardo, M., Gautier, T., Voyer, D., Bryden, M.P. (1991) Cognitive abilities in androgen-insensitive subjects: comparison with control males and females from the same kindred. *Clin Endocrinol (Oxf)*. 34(5):341-7.

Indefrey, P., Levelt, W.J.M. (2000) The neural correlates of language production. In *The new Cognitive Neurosciences*, 2nd ed. (M.S. Gazzaniga, Ed.), pp. 845-865. MIT Press, Cambridge, MA.

Inglis, J., Lawson, J.S. (1981) Sex differences in the effects of unilateral brain damage on intelligence. *Science*, 212(4495):693-5.

Isaacs, B. & Kennie, A.T. (1973) The Set Test as an aid to the detection of dementia in old people. *British Journal of Psychiatry*, 123, 467 – 470.

Jablensky, A., Cole, S.W. (1997) Is the earlier age at onset of schizophrenia in males a confounded finding? Results from a cross-cultural investigation *Br J Psychiatry*, 170, 234-40.

Jacklin CN, Wilcox KT, Maccoby EE. (1988) Neonatal sex-steroid hormones and cognitive abilities at six years. *Dev Psychobiol.* 21(6):567-74.

Jacobs, D.M., Tang, M.X, Stern, Y., Sano, M., Marder, K., Bell, K.L., Schofield, P., Dooneief, G., Gurland, B., Mayeux, R. (1998) Cognitive function in non-demented older women who took estrogen after menopause. *Neurology*, 50: 368-73.

Jaeger, J.J., Lockwood, A.H., Van Valin Jr, R.D., Kemmerer, D.L., Murphy, B.W. & Wack, D.S. (1998) Sex differences in brain regions activated by grammatical and reading tasks. *NeuroReport*, 9: 2803-2807.

James, T.W. & Kimura, D. (1997) Sex differences in remembering the location of objects in an array: Location shifts versus location exchanges. *Evolution and Human Behaviour*, 18, 155 – 163.

Jameison K, Dinan TG. (2001) Glucocorticoids and cognitive function: from physiology to pathophysiology. *Hum Psychopharmacol.* 16(4):293-302.

Jancke, L., Staiger, J.F., Schlaug, G., Huang, Y., Steinmetz, H. (1997) The relationship between corpus callosum size and forebrain volume. *Cereb Cortex*, 7(1):48-56.

Jansari, A., Tranel, D. & Adolphs, R. (2000) A valence specific lateral bias for discriminating emotional facial expressions in free field. *Cognition and Emotion*, 14, 341 – 353.

Janowsky, J.S., Oviatt, S.K. & Orwoll, E.S. (1994) Testosterone influences spatial cognition in older men. *Behavioural Neuroscience*, 108, 325 – 332.

Janowsky, J.S., Chavez, B., Zamboni, B.D., Orwoll E. (1998) The cognitive neuropsychology of sex hormones in men and women. *Developmental Neuropsychology*, 14, 421 – 440.

Janowsky JS, Chavez B, Orwoll E. (2000) Sex steroids modify working memory. *J Cogn Neurosci.* 12(3):407-14.

Janowsky JS. (2002) The role of ovarian hormones in preserving cognition in aging. *Curr Psychiatry Rep.*4(6):467-73.

Jansma, J.M., Ramsey, N.F., Coppola, R., Kahn, R.S. (2000) Specific versus nonspecific brain activity in a parametric N-back task. *Neuroimage*, 12(6):688-97.

Jensen, A.R. (1988) Sex differences in arithmetic computation and reasoning in pre-pubertal boys and girls. *Behavioural and Brain Sciences*, 11, 198 – 199.

Jensen, A.R. (1998) The g factor: the science of mental ability. Westport, CT: Praeger.

Joels M, deKloet E R (1992): Control of neuronal excitability by corticosteroid hormones. Trends in Neuroscience 15:25-30

Johnsrude, I.S., Owen, A.M., Crane, J., Milner, B. & Evans, A.C. (1999) A cognitive activation study of memory for spatial relationships. Neuropsychologia, 37, 829 – 841.

Johnson, E.S. (1984) Sex differences in problem solving. Journal of Educational Psychology, 76, 1359 – 1371.

Jonsson H, Nyman A K (1991) Predicting long-term outcome in schizophrenia. Acta Psychiatr Scand 83: 342-346

Johnson, M. & Everitt, B. (1988) Essential reproduction. 3rd Edition. (Oxford: Blackwell).

Johnson, M.D., Ojemann, G.A. (2000) The role of the human thalamus in language and memory: evidence from electrophysiological studies Brain Cogn. 42:218-30.

Johnstone, E.C., Owens, D.G., Crow, T.J., Frith, C.D., Alexandropolis, K., Bydder, G., Colter, N. (1989) Temporal lobe structure as determined by nuclear magnetic resonance in schizophrenia and bipolar affective disorder. J Neurol Neurosurg Psychiatry, 52(6):736-41.

Jordan, K., Heinze, H.J., Lutz, K., Kanowski, M. & Jancke, L. (2001) Cortical activations during the mental rotation of different visual objects. NeuroImage, 13, 143 – 152.

Jordan K, Wustenberg T, Heinze HJ, Peters M, Jancke L. (2002) Women and men exhibit different cortical activation patterns during mental rotation tasks. *Neuropsychologia*. 40(13):2397-408.

Jorgenson, C.B., Davis, W.P., Opella, J.L. (1983) Hemispheric asymmetry in the processing of stroop stimuli: a balanced design. *International Journal of Neuroscience*, 3-4, 171 – 174.

Joyce, E.M., Collinson, S.L., Crichton, P. (1996) Verbal fluency in schizophrenia: relationship with executive function, semantic memory and clinical alogia. *Psychol Med*. 26(1):39-49.

Just MA, Carpenter PA, Maguire M, Diwadkar V, McMains S. (2001) Mental rotation of objects retrieved from memory: a functional MRI study of spatial processing. *J Exp Psychol Gen*. 130(3):493-504.

Kagan, J. (1964) Acquisition and significance of sex-typing and sex-role identity. In Hoffman, M.L. & Hoffman, L.W. (Eds) *Review of Child Developmental Research*, Vol. 1. (New York: Sage).

Kampen, D.L. & Sherwin, B.B. (1996) Estradiol is related to visual memory in healthy young men. *Behavioural Neuroscience*, 110, 613 – 617.

Kampen, D., & Sherwin, B.B. (1994). Estrogen use and verbal memory in healthy postmenopausal women. *Obstetrics and Gynaecology*, 83, 979-983.

Kansaku, K., Yamaura, A. & Kitazawa, S. (2000) Sex differences in lateralisation revealed in the posterior language areas. *Cerebral Cortex*, 10, 866 – 872.

Kansaku, K., Kitazawa, S. (2001) Imaging studies on sex differences in the lateralization of language. *Neurosci Res.* 41(4):333-7.

Kaneko M, Yokoyama F, Hoshino Y, Takahagu K, Murata S, Watanabe M et al. (1992) Hypothalamic pituitary adrenal axis function in chronic schizophrenia: Association with clinical features. *Neuropsychobiology* 25: 1-7.

Kapur, S., Rose, R., Liddle, P.F., Zipursky, R.B., Brown, G.M., Stuss, D., Houle, S., Tulving, E. (1994) The role of the left prefrontal cortex in verbal processing: semantic processing or willed action? *Neuroreport.*5:2193-6.

Karadi, K., Szabo, I., Szepesi T., Kallai, J., & Kovacs, B. (1999). Sex differences on the hand mental rotation task for 9-yr-old children and young adults. *Perceptual and Motor Skills*, 89, 969-972.

Kato, E., Koketsu, K., Kuba, K., Kumamoto, E. (1985) The mechanism of the inhibitory action of adrenaline on transmitter release in bullfrog sympathetic ganglia: independence of cyclic AMP and calcium ions. *Br J Pharmacol.* 84(2):435-43.

Katsanis, J., Iacono, W.G. (1989) Association of left-handedness with ventricle size and neuropsychological performance in schizophrenia. *Am J Psychiatry*, 146(8):1056-8.

Kim, Y.H., Gitelman, D.R., Nobre, A.C., Parrish, T.B., LaBar, K.S., Mesulam, M.M. (1999) The large-scale neural network for spatial attention displays multifunctional overlap but differential asymmetry. *Neuroimage.*9:269-77.

Kaufman, A.S., McLean, J.e. & Reynolds, C.R. (1988) Sex, race, residence, region and education differences on the 11 WAIS-R subtests. *Journal of Clinical Psychology*, 44, 231 – 248.

Kavaliers M, Wiebe J P (1987) Analgesic effects of the progesterone metabolite 3 α -hydroxy-5 α -pregnan-20-one and possible modes of action in mice. *Brain Res.* 415: 393-398.

Kay S R, Fiszbein A, and Opler L A (1987). The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophrenia Bulletin* 13:261-276.

Keefe, R.S., Silva, S.G., Perkins, D.O., Lieberman, J.A. (1999) The effects of atypical antipsychotic drugs on neurocognitive impairment in schizophrenia: a review and meta-analysis. *Schizophr Bull.* 25(2):201-22.

Keenan, P.A, Ezzat, W.H, Ginsburg, K, Moore, G.J. (2001) Prefrontal cortex as the site of estrogen's effect on cognition. *Psychoneuroendocrinology.* 26(6):577-90.

Keller, J., Nitschke, J.B., Bhargava, T., Deldin, P.J., Gergen, J.A., Miller, G.A. & Heller, W. (2000) Neuropsychological differentiation of depression and anxiety. *Journal of Abnormal Psychology*, 109, 3 – 10.

Kelly, T.P. & Britton, P.G. (1996) Sex differences on an adaptation of the Digit-Symbol subtest of the Wechsler Intelligence Scale for Children-III. *Perceptual and Motor Skills*, 83, 843 – 847.

Kelso, W.M., Nicholls, M.E.R., Warne, G.L. & Zacharin, M. (2000) Cerebral lateralisation and cognitive functioning in patients with congenital adrenal hyperplasia. *Neuropsychology*, 14, 370 – 378.

Kendrick, K.M., Haupt, M.A., Hinton, M.R., Broad, K.D. & Skinner, J.D. (2001) Sex differences in the influence of mothers on the sociosexual preferences of their offspring. *Hormones and Behaviour*, 40, 322 – 338.

Kennedy, D.N., Lange, N., Makris, N., Bates, J., Meyer, J. & Caviness, V.S. Jr. (1998) Gyri of the human neocortex: a MRI based analysis of volume and variance. *Cerebral Cortex*, 8, 372 – 384.

Kenny, A.M., Bellantonio, S., Gruman, C.A., Acosta, R.D. & Prestwood, K.M. (2002) Effects of transdermal testosterone on cognitive function and health perception in older men with low bioavailable testosterone levels. *Journal of Gerontology Series A*, 57, 321 – 325.

Keenan, P.A., Ezzat, W.H., Ginsburg, K. & Moore, G.J. (2001) Prefrontal cortex as the site of estrogens effect on cognition. *Psychoneuroendocrinology*, 26, 577 – 590.

Kelso, W.M, Nicholls, M.E, Warne, G.L, Zacharin, M. (2000) Cerebral lateralization and cognitive functioning in patients with congenital adrenal hyperplasia. *Neuropsychology*, 14(3):370-8.

Kemali, D., Maj, M., Ariano, M.G., Arena, F., Lovero, N. (1985) 24-hour plasma levels of prolactin, cortisol, growth hormone and catecholamines in schizophrenic patients. *Neuropsychobiology*, 14(3):109-14.

Kendell, R.E., Chalmers, J.C., Platz, C. (1987) Epidemiology of puerperal psychoses. *Br J Psychiatry*, 150:662-73.

Kerns, K.A. & Berenbaum, S.A. (1991) Sex differences in spatial ability in children. *Behaviour Genetics*, 21, 383 – 391.

Kessels, R.P.C., de Haan, E.H.F., Kappelle, L.J. & Postma, A. (2001) Varieties of human spatial memory: a meta-analysis on the effects of hippocampal lesions. *Brain Research Reviews*, 35, 295 – 303.

Kessels, R.P.C., Postma, A., Wijnalda, E.M. & De Haan, E.H.F. (2000) Frontal lobe involvement in spatial memory: Evidence from PET, fMRI and lesion studies. *Neuropsychological Review*, 10, 101 – 113.

Kesler-West, M.L., Andersen, A.H., Smith, C.D., Avison, M.J., Davis, C.E., Kryscio, R.J. & Blonder, L.X. (2001) Neural substrates of facial emotion processing using fMRI. *Cognitive Brain Research*, 11, 213 – 226.

Kimura, D. (1993) *Neuromotor Mechanisms in Human Communication* (New York: Oxford University Press).

Kimura, D. (1994) Body asymmetry and intellectual pattern. *Personality and Individual Differences*, 17, 53 – 60.

Kimura, D. (1996) Sex, sexual orientation and sex hormones influence human cognitive function. *Current Opinion in Neurobiology*, 6, 259-263.

Kimura, D (1999) *Sex and Cognition* (MA: The MIT Press).

Kimura, D. (1995). Estrogen replacement therapy may protect against intellectual decline in postmenopausal women. *Hormones and Behavior*, 29, 312-321.

Kimura, D & Hampson, E. (1994) Cognitive pattern in men and women is influenced by fluctuations in sex hormones. *Current Directions in Psychological Science*, 3, 57-61.

Kinon, B.J, Gilmore, J.A, Liu, H, Halbreich, U.M. (2003) Hyperprolactinemia in response to antipsychotic drugs: characterization across comparative clinical trials. *Psychoneuroendocrinology*, 28 Suppl 2:69-82.

Kinon BJ, Gilmore JA, Liu H, Halbreich UM. (2003) Prevalence of hyperprolactinemia in schizophrenic patients treated with conventional antipsychotic medications or risperidone. *Psychoneuroendocrinology*, 28 Suppl 2:55-68.

Kirschbaum, C. (1999). Two weeks of transdermal estradiol treatment in postmenopausal elderly women and its effect on memory and mood: verbal memory changes are associated with the treatment induced estradiol levels. *Psychoneuroendocrinology*, 24, 727-741.

Klaiber, E.L., Broverman, D.M., & Kobayashi, Y. (1967). The automatization of cognitive style, androgens, and monoamine oxidase. *Psychopharmacology*, 11, 320-336.

Kleinman, J.E., Weinberger, D.R., Rogol, A.D., Bigelow, L.B., Klein, S.T., Gillin, J.C., Wyatt, R.J. (1982) Plasma prolactin concentrations and psychopathology in chronic schizophrenia. *Arch Gen Psychiatry*, 39(6):655-7.

Kleinschmidt, A., Falkai, P., Huang, Y., Schneider, T., Furst, G., Steinmetz, H. (1994) In vivo morphometry of planum temporale asymmetry in first-episode schizophrenia. *Schizophr Res*. 12(1):9-18.

Klingberg, T., Forssberg, H., Westerberg, H. (2002) Increased brain activity in frontal and parietal cortex underlies the development of visuospatial working memory capacity during childhood. *J Cogn Neurosci*. 14(1):1-10.

Kleinberg D L, Davis J M, De Coster T, Van Vaelen B, Mrecher M.(1999) Prolactin levels and adverse events in patients treated with risperidone. *J. Clin. Psychopharmacology* 19 : 57-61.

Klove, H. (1963) clinical neuropsychology. med clin north am. 47:1647-58.

Knecht, S., Deppe, M., Drager, B., Bobe, L., Lohmann, H., Ringelstein, E.B. & Henningsen, H. (2000) Language lateralization in healthy right-handers. Brain, 123, 74 – 81.

Knecht, S., Floel, A., Drager, B., Breitenstein, C., Sommer, J., Henningsen, H, Ringelstein, E.B., Pascual-Leone, A. (2002) Degree of language lateralization determines susceptibility to unilateral brain lesions. Nat Neurosci. 5(7):695-9.

Koertge, N. (2000) A house built on sand: exposing postmodernist myths about science. Oxford University Press.

Kolb, B. & Whishaw, I.G. (1995) Fundamentals of Human Neuropsychology (WH Freeman).

Kolb, B., Whishaw, I.Q. (1983) Performance of schizophrenic patients on tests sensitive to left or right frontal, temporal, or parietal function in neurological patients. J Nerv Ment Dis. 171(7):435-43.

Koller W C, Weiner W J, Klawans H L, Nausieda P A (1980) Influence of female sex hormones on antipsychotic induced behavioural supersensitivity. Neuropharmacology 19: 387-391.

Kopala, L.C, Lewine, R, Good, K.P, Fluker, M, Martzke, J.S, Lapointe, J.S, Honer, W.G. (1997). Clinical features of schizophrenia in a woman with hyperandrogenism. J Psychiatry Neurosci. 22(1):56-60.

Kopala, L., Clark, C. (1990) Implications of olfactory agnosia for understanding sex differences in schizophrenia. Schizophr Bull. 16(2):255-61.

Kopell, B.S, Wittner, W.K, Lunde, D, Warrick, G, Edwards, D. (1970). Cortisol effects on averaged evoked potentials, alpha-rhythm, time estimation, and two-flash fusion threshold. *Psychosom Med.* 32(1):39-49.

Koski, L. & Petrides, M. (2001) Time-related changes in task performance after lesions restricted to the frontal cortex. *Neuropsychologia*, 39, 268 – 281.

Kosslyn, S.M., Digirolamo, G.J., Thompson, W.L. & Alpert, N.M. (1998) Mental rotation of objects versus hands: Neural mechanisms revealed by positron emission tomography. *Psychophysiology*, 35, 151-161.

Kramer, J.H., Delis, D.C. & Daniel, M. (1988) Sex differences in verbal learning. *Journal of Clinical Psychology*, 44, 907 – 915.

Kramer, J.H., Delis, D.C., Kaplan, E., O'Donnell, L., Prifitera, A. (1997) Developmental sex differences in verbal learning. *Neuropsychology*, 11, 577 – 584.

Kritz-Silverstein, D, Barrett-Connor, E. (2002) Hysterectomy, oophorectomy, and cognitive function in older women. *J Am Geriatr Soc*, 50(1):55-61.

Kubota, K., Niki, H. (1971) Prefrontal cortical unit activity and delayed alternation performance in monkeys. *J Neurophysiol.* 34(3):337-47.

Kulkarni, J, Riedel, A, de Castella, A.R, Fitzgerald, P.B, Rolfe, T.J, Taffe, J, Burger, H. (2002) A clinical trial of adjunctive oestrogen treatment in women with schizophrenia. *Arch Women Ment Health.* 2002 Nov;5(3):99-104.

Kulkarni, J, Riedel, A, de Castella, A.R, Fitzgerald, P.B, Rolfe, T.J, Taffe, J, Burger, H. (2001) Estrogen - a potential treatment for schizophrenia. *Schizophr Res.* 1;48(1):137-44.

Kulkarni J. (1997) Women and schizophrenia: a review. *Aust N Z J Psychiatry*. 31(1):46-56.

Kulkarni J, deCastella A, Smith D, Taffe J, Keks N, Copolov D (1996) A clinical trial of the effects of estrogen in acutely psychotic women *Schizophrenia Research* 20: 247-252.

Kulkarni J, deCastella A, Taffe J (1999) Clinical adjunctive estrogen trial in men with schizophrenia: a pilot study. *Schizophrenia Research* 36: 286.

Kulynych, J.J., Vldar, K., Fantie, B.D., Jones, D.W., Weinberger, D.R. (1995) Normal asymmetry of the planum temporale in patients with schizophrenia. Three-dimensional cortical morphometry with MRI. *Br J Psychiatry*. 166(6):742-9.

Kumari, V., Gupta, P., Luscher, S., Sharma, T. (2003) Sex differences in prepulse inhibition. *Person. Individ. Diff*. 35, 733-742.

Kumari, V., Corr, P.J. (1996) Menstrual cycle, arousal-induction, and intelligence test performance. *Psychol Rep*. 78:51-8.

Kwon, J.S., McCarley, R.W., Hirayasu, Y., Anderson, J.E., Fischer, I.A., Kikinis, R., Jolesz, F.A., Shenton, M.E. (1999) Left planum temporale volume reduction in schizophrenia. *Arch Gen Psychiatry*, 56(2):142-8.

Lacreuse, A., Verreault, M. & Herndon, J.G. (2001) Fluctuations in spatial recognition memory across the menstrual cycle in female rhesus monkeys. *Psychoneuroendocrinology*, 26, 623 – 639.

Lacreuse, A., Herndon, J.G., Killiany, R.J., Rosene, D.L. & Moss, M.B. (1999) Spatial cognition in Rhesus monkeys: Male superiority declines with age. *Hormones & Behaviour*, 36, 70 – 76.

Lacreuse, A, Wilson, M.E, Herndon, J.G. (2002) Estradiol, but not raloxifene, improves aspects of spatial working memory in aged ovariectomized rhesus monkeys. *Neurobiol Aging*. 23(4):589-600.

Lancel M, Faulhaber J, Holsboer F, Rupprecht R (1996) Progesterone induces changes in sleep EEG comparable to those of agonistic GABA_A receptor modulators. *Am. J. Physiol*. 271: E763-E772.

Lupien, S.J., Gaudreau, S., Tchiteya, B.M., Maheu, F., Sharma, S., Nair, N.P., Hauger, R.L., McEwen, B.S., Meaney, M.J. (1997) Stress-induced declarative memory impairment in healthy elderly subjects: relationship to cortisol reactivity. *J Clin Endocrinol Metab*. 82(7):2070-5.

Lupien S J, Gillin C J, Hauger R L, (1999): Working memory is more sensitive than declarative memory to the acute effects of corticosteroids: A dose-response study in humans. *Behavioural Neuroscience* 113: 420-430.

Laws, K.R. (1999) Gender affects naming latencies for living and nonliving things: Implications for familiarity. *Cortex*, 35, 729 – 733.

LeBlanc, E.S, Janowsky, J, Chan, B.K, Nelson, H.D. (2001) Hormone replacement therapy and cognition: systematic review and meta-analysis. *JAMA*. 285(11):1489-99.

Lencz, T., McCarthy, G., Bronen, R.A., Scott, T.M., Inserni, J.A., Sass, K.J., Novelly, R.A., Kim, J.H., Spencer, D.D. (1992) Quantitative magnetic resonance imaging in temporal lobe epilepsy: relationship to neuropathology and neuropsychological function. *Ann Neurol*. 31(6):629-37.

Leung, H.C., Skudlarski, P., Gatenby, J.C., Peterson, B.S., Gore, J.C. (2000) An event-related functional MRI study of the stroop color word interference task. *Cereb Cortex*, 10(6):552-60.

Lewis, S.W. (1989) Congenital risk factors for schizophrenia. *Psychol Med*. 19(1):5-13.

Luchins, D.J., Robertson, A.G., Meltzer, H.Y. (1984) Serum prolactin, psychopathology, and ventricular size in chronic schizophrenia. *Psychiatry Res*. 12(2):149-53.

Lewine, R., Haden, C., Caudle, J., Shurett, R. (1997) Sex-onset effects on neuropsychological function in schizophrenia. *Schizophr Bull*. 23(1):51-61.

Lewine, R.R., Walker, E.F, Shurett, R, Caudle, J, Haden, C. (1996). Sex differences in neuropsychological functioning among schizophrenic patients. *Am J Psychiatry*. 153(9):1178-84.

Lewine, R.R., Gulley, L.R, Risch, S.C, Jewart, R, Houpt, J.L. (1990) Sexual dimorphism, brain morphology, and schizophrenia. *Schizophr Bull*. 16(2):195-203.

Lewine, R.R. (1981) Sex differences in schizophrenia: timing or subtypes? *Psychol Bull*. 90(3):432-4.

Lewine, R.R. (1990) Reflections on Saugstad's "social class, marriage, and fertility in schizophrenia". *Schizophr Bull*. 1990;16(2):171-4.

Lewine, R.R., Hudgins, P., Brown, F., Caudle, J., Risch, S.C. (1995) Differences in qualitative brain morphology findings in schizophrenia, major depression, bipolar disorder, and normal volunteers. *Schizophr Res*. 15(3):253-9.

Leung, A, Chue, P. (2000). Sex differences in schizophrenia, a review of the literature. *Acta Psychiatr Scand Suppl.* 401:3-38.

Levine, S.C., Huttenlocher, J., Taylor, A. & Langrock, A. (1999) Early sex differences in spatial skill. *Developmental Psychology*, 35, 940 – 949.

Levy, J. & Heller, W. (1981) Perception and expression of emotion in right handers and left handers. *Neuropsychologia*, 19, 263 – 272.

Levy, J. & Heller, W. (1992) Gender differences in human neuropsychological function. In Gerall, A.A., Moltz, H. & Ward, I.L. (Eds) *Sexual differentiation: Handbook of behavioural neurology*, Vol. 11 (New York: Plenum Press)

Levy, J., Heller, W., Banich, M.T. & Burton, L.A. (1983a) Are variations among right handed individuals in perceptual asymmetries caused by characteristic arousal differences between hemispheres? *Journal of Experimental Psychology: Human Perception and Performance*, 9, 329 – 359.

Levy, J. & Levy, J.M. (1978) Human lateralisation from head to foot: sex related factors. *Science*, 200, 1291 – 1292.

Lewis, R.S. & Harris, L.J. (1990) Handedness, sex and spatial ability. In Coren, S. (Ed), *Left-handedness: Behavioural implications and anomalies*. (Amsterdam: Elsevier).

Lewin, C., Wolgers, G. & Herlitz, A. (2001) Sex differences favouring women in verbal but not in visuospatial episodic memory. *Neuropsychology*, 15, 165 – 173.

Lewin, J.S., Friedman, L., Wu, D., Miller, D.A., Thompson, L.A., Klein, S.K., Wise, A.L., Hedera, P., Buckley, P., Meltzer, H., Freidland, R.P. & Duerk, J.L. (1996) Cortical localization of human sustained attention: Detection with functional

MR using a visual vigilance paradigm. *Journal of Computer Assisted Tomography*, 20, 695 – 701.

Lezak, M.D. (1995) *Neuropsychological Assessment*, 3rd Ed. (Oxford University Press).

Liao, D.L., Chen, H., Lee, S.M., Tsai, S.J. (2002) Estrogen supplementation for female schizophrenics treated with atypical antipsychotics. *Gen Hosp Psychiatry*, 24(5):357-9.

Lieberman, J.A., Alvir, J.M., Woerner, M., Degreef, G., Bilder, R.M., Ashtari, M., Bogerts, B., Mayerhoff, D.I., Geisler, S.H., Loebel, A., et al. (1992) Prospective study of psychobiology in first-episode schizophrenia at Hillside Hospital. *Schizophr Bull.* 18(3):351-71.

Liben, L.S., Susman, E.J., Finkelstein, J.W., Chinchilli, V.M., Kunselman, S., Schwab, J., Dubas, J.S., Demers, Lookingbill, G., D’Arcangelo, M.R., Krogh, H.R. & Kulin, H.E. (2002) The effects of sex steroids on spatial performance: a review and an experimental clinical investigation. *Developmental Psychology*, 38, 236 – 253.

Lindamer, L.A, Lohr, J.B, Harris, M.J, McAdams, L.A, Jeste, D.V. (1999) Gender-related clinical differences in older patients with schizophrenia. *J Clin Psychiatry*. 60(1):61-7; quiz 68-9.

Lindamer, L.A, Lohr, J.B, Harris, M.J, Jeste, D.V. (1997) Gender, estrogen, and schizophrenia. *Psychopharmacol Bull.* 33(2):221-8.

Lindamer, L.A., Buse, D.C., Lohr, J.B., Jeste, D.V. (2001) Hormone replacement

therapy in postmenopausal women with schizophrenia: positive effect on negative symptoms? *Biol Psychiatry*. 49(1):47-51.

Linn, M.C. & Petersen, A.C. (1985) Emergence and characterisation of sex differences in spatial ability: A meta-analysis. *Child Development*, 56, 1479-1498.

Lippa, R.A. (2001) Gender-related traits in transsexuals and nontranssexuals. *Arch Sex Behav*. 30(6):603-14.

Lishman, W.A., Toone, B.K., Colbourn, C.J., McMeekan, E.R., Mance, R.M. (1978) Dichotic listening in psychotic patients. *Br J Psychiatry*, 132:333-41.

Loonstra, A.S., Tarlow, A.R. & Sellers, A.H. (2001) COWAT metanorms across age, education and gender. *Applied Neuropsychology*, 8, 161 – 166.

Loranger, A.W. (1984) Sex difference in age at onset of schizophrenia. *Arch Gen Psychiatry*, 41(2):157-61.

Loring-Meier, S. & Halpern, D.F. (1999) Sex differences in visuo-spatial working memory: Components of cognitive processing. *Psychonomic Bulletin & Review*, 6, 464 – 471.

Lorr, M. & McNair, D.M.(1988) *Manual of Profile Of Mood States, Bi-polar Form (POMS-BI)*, Educational and Industrial Testing Service, San Diego.

Luine, V.N. (1994) Steroid hormone influences on spatial memory. *Ann N Y Acad Sci*. 14;743:201-11.

Luine, V, Rodriguez, M. (1994) Effects of estradiol on radial arm maze performance of young and aged rats. *Behav Neural Biol*. 62(3):230-6.

Lupien, S.J., Wilkinson, C.W., Briere, S., Menard, C., Ng Ying Kin, N.M., Nair, N.P. (2002) The modulatory effects of corticosteroids on cognition: studies in young human populations. *Psychoneuroendocrinology*, 27(3):401-16.

Lupien, S., Lecours, A.R., Lussier, I., Schwartz, G., Nair, N.P., Meaney, M.J. (1994) Basal cortisol levels and cognitive deficits in human aging. *J Neurosci.* 14(5 Pt 1):2893-903.

Lupien, S., Lecours, A.R., Schwartz, G., Sharma, S., Hauger, R.L., Meaney, M.J., Nair, N.P. (1996) Longitudinal study of basal cortisol levels in healthy elderly subjects: evidence for subgroups. *Neurobiol Aging*, 17(1):95-105.

Lurito, J.T., Kareken, D.A., Lowe, M.J., Chen, S.H.A. & Mathews, V.P. (2000) Comparison of rhyming and word generation with fMRI. *Human Brain Mapping*, 10, 99 – 106.

Lutchmaya, S., Baron-Cohen, S., Raggatt, P., Knickmeyer, R., Manning, J.T. (2004) 2nd to 4th digit ratios, fetal testosterone and estradiol. *Early Human Development* (in press).

Lynn, R. (1994) Sex differences in intelligence and brain size: A paradox resolved. *Personality and Individual Differences*, 17, 257-271.

Lynn, R. & Dai, X.Y. (1993) Sex differences on the Chinese standardisation sample of the WAIS-R. *Journal of Genetic Psychology*, 154, 459 – 463.

Maccoby, E.E. & Jacklin, C.N. (1974) *The Psychology of Sex Differences*. (CA: Stanford University Press)

Mackintosh, N.J. (1996) Sex differences and IQ. *Journal of Biosocial Science*, 28, 559 – 572.

Mackintosh, N.J. (1998) A reply to Lynn. *Journal of Biosocial Science*, 30, 533 – 539.

Majeres, R.L. (1999) Sex differences in phonological processes: Speeded matching and word reading. *Memory & Cognition*, 27, 246 – 253.

Majeres, R.L. (1990) Sex differences in comparison and decision processes when matching strings of symbols. *Intelligence*, 14, 357 – 370.

Majeres, R.L. (1988) Serial comparison processes and sex differences in clerical speed. *Intelligence*, 12, 149 – 165.

Maki, P M, Resnick, S.M. (2001) Effects of estrogen on patterns of brain activity at rest and during cognitive activity: a review of neuroimaging studies. *Neuroimage*.14: 789-801.

Maki, P.M., Rich, J.B. & Rosenbaum, R.S. (2002) Implicit memory varies across the menstrual cycle: estrogen effects in young women. *Neuropsychologia*, 40, 518 – 529.

Mann, V.A., Sasanuma, S., Sakuma, N. & Masaki, S. (1990) Sex differences in cognitive abilities: a cross-cultural perspective. *Neuropsychologia*, 28, 1063 – 1077.

Maki, P, Zonderman, A, Resnick, S. (2001) Enhanced verbal memory in nondemented elderly women receiving hormone-replacement therapy. *Am J Psychiatry*. 158(2):227-33.

Manoach, D.S., Gollub, R.L., Benson, E.S., Searl, M.M., Goff, D.C., Halpern, E., Saper, C.B, Rauch, S.L. (2000) Schizophrenic subjects show aberrant fMRI activation of dorsolateral prefrontal cortex and basal ganglia during working memory performance. *Biol Psychiatry*, 48(2): 99-109.

Marcus, J., Hans, S.L., Nagler, S., Auerbach, J.G., Mirsky, A.F., Aubrey, A. (1987) Review of the NIMH Israeli Kibbutz-City Study and the Jerusalem Infant Development Study. *Schizophr Bull.* 13(3):425-38.

Marx, C.E, Lieberman, J.A. (1998) Psychoneuroendocrinology of schizophrenia. *Psychiatr Clin North Am.* 1998 Jun;21(2):413-34.

Masters, M.S. (1998) The gender difference on the mental rotations test is not due to performance factors. *Memory & Cognition*, 26, 444 – 448.

Masters, M.S. & Sanders, B. (1993) Is the gender difference in mental rotation disappearing? *Behaviour Genetics*, 23, 337 – 341.

Matarazzo, J.D. (1972) Wechsler's Measurement and Appraisal of Adult Intelligence, 5th Ed. (New York: Oxford University Press).

Mathews, K., Cauley, J., Yaffe, K., and Zmuda, J. M. (1999) Estrogen replacement therapy and cognitive decline in older community women. *Journal of the American Geriatric Society*, 47, 518-523.

Matsumoto, A. Ed, (2000) Sexual differentiation of the brain. (CRC Press).

Matthews, K., Cauley, J., Yaffe, K., Zmuda, J.M. (1999) Estrogen replacement therapy and cognitive decline in older community women. *J Am Geriatr Soc.* 47(5):518-23.

Mayer, A., Lahr, G., Swaab, D.F., Pilgrim, C. & Reisert, I. (1998) The Y chromosomal genes SRY and ZFY are transcribed in the adult human brain. *Neurogenetics*, 1, 281 – 288.

Mays, V.M. & Cochran, S.D. (2001) Mental health correlates of perceived discrimination among lesbian, gay and bisexual adults in the United States. *American Journal of Public Health*, 91, 1869 – 1876.

Mazoyer, B.M., Tzourio, N., Frak, V., Syrota, A., Muryama, N., Levrier, O., Salamon, G., Dehaene, S., Cohen, L., Mehler, J. (1993) The cortical representation of speech. *Journal of Cognitive Neuroscience*, 5, 467-479.

McAllister-Williams, R.H., Rugg, M.D. (2002) Effects of repeated cortisol administration on brain potential correlates of episodic memory retrieval. *Psychopharmacology (Berl)*.160(1):74-83.

McBurney, D.H., Gaulin, S.J.C., Devineni, T. & Adams, C. (1997) Superior spatial memory of women: stronger evidence for the gathering hypothesis. *Evolution & Human Behaviour*, 18, 165 – 174.

McCabe, R., Quayle, E., Beirne, A.D., Anne, Duane, M.M. (2002) Insight, global neuropsychological functioning, and symptomatology in chronic schizophrenia. *J Nerv Ment Dis*. 190(8):519-25.

McCarthy, G., Blamire, A.M., Puce, A., Nobre, A.C., Bloch, G., Hyder, F., Goldman-Rakic P., Shulman, R.G. (1994) Functional magnetic resonance imaging of human prefrontal cortex activation during a spatial working memory task. *Proc Natl Acad Sci U S A*. 30;91(18):8690-4.

McCarthy, G., Puce, A., Constable, R.T., Krystal, J.H., Gore, J.C., Goldman-Rakic, P. (1996) Activation of human prefrontal cortex during spatial and nonspatial

working memory tasks measured by functional MRI. *Cereb Cortex*. 6(4):600-11.

McCarthy, G., Blamire, A.M., Rothman, D.L., Gruetter, R., Shulman, R.G. (1993) Echo-planar magnetic resonance imaging studies of frontal cortex activation during word generation in humans *Proc Natl Acad Sci U S A*. 90:4952-6.

McCormick, C.M. & Teillon, S.M. (2001) Menstrual cycle variation in spatial ability: relation to salivary cortisol levels. *Hormones & Behaviour*, 39, 29 – 38.

Mead, L.A., Mayer, A.R., Bobholz, J.A., Woodley, S.J., Cunningham, J.M., Hammeke, T.A., Rao, S.M. (2002) Neural basis of the Stroop interference task: response competition or selective attention? *J Int Neuropsychol Soc*. 8(6):735-42.

Mehta, Z., Newcombe, F. (1991) A role for the left hemisphere in spatial processing. *Cortex*, 27(2):153-67.

Mekarski, J.E., Cutmore, T.R., Suboski, W. (1996) Gender differences during processing of the Stroop task. *Percept Mot Skills*, 83(2):563-8.

Mendelson, W.B., Gillin, J.C., Wyatt, R.J. (1977) Sexual physiology and schizophrenia. *Acta Cient Venez*. 28(6):417-25.

McEwen, B.S. (1983) Gonadal steroid influences on brain development and sexual differentiation. In R.O.Greep (Ed) *Reproductive physiology IV*. (Baltimore: University Park Press.)

McEwen, B.S. (1992) Steroid hormones: effect on brain development and function. *Horm Res*. 37 Suppl 3:1-10.

McEwen, B. (2002). Estrogen actions throughout the brain. *Recent Prog Horm Res*, 57:357-84

McEwen, B.S. (2001). Invited review: Estrogens effects on the brain: multiple sites and molecular mechanisms. *J Appl Physiol.* 91(6):2785-801.

McEwen, B.S, Gould, E.A, Sakai, R.R. (1992). The vulnerability of the hippocampus to protective and destructive effects of glucocorticoids in relation to stress.

Br J Psychiatry Suppl. (15):18-23.

McEwen B S, and Woolley C S (1994) Estradiol and progesterone regulate neuronal structure and synaptic connectivity in adult as well as developing brain. *Exp.Gerontol.* 29: 431-436.

McEwen, B.S., Alves, S.E., Bulloch, K., Weiland, N.G. (1998) Clinically relevant basic science studies of gender differences and sex hormone effects. *Psychopharmacol Bull.* 34(3):251-9.

McFadden, D. (1993) A masculinising effect on the auditory systems of human females having male co-twins. *Proceedings of the National Academy of Sciences, USA*, 90, 11900 – 11904.

McGlone, J (1980) Sex differences in human brain asymmetry: a critical survey. *Behavioural and Brain Sciences*, 3, 215 – 264.

McGlone, J. (1977) Sex differences in the cerebral organization of verbal functions in patients with unilateral brain lesions. *Brain*, 100(4):775-93.

McGowan, J.F. & Duka, T. (2000) Hemispheric lateralisation in a manual-verbal task combination: The role of modality and gender. *Neuropsychologia*, 38, 1018 – 1027.

McGuiness, D. & Morely, C. (1991) Sex differences in the development of visuo-spatial ability in pre-school children. *Journal of Mental Imagery*, 15, 143 – 150.

McKeever, W.F. & Deyo, R.A. (1990) Testosterone, dihydrotestosterone and spatial task performance of males. *Bulletin of the Psychonomic Society*, 28, 305 – 308.

McKeever, W.F., Rich, D.A., Deyo, R.A. & Conner, R.L. (1987) Androgens and spatial ability: failure to find a relationship between testosterone and ability measures. *Bulletin of the Psychonomic Society*, 25, 438 – 440.

McManus, I.C. & Bryden, M.P. (1991) Geschwind's theory of cerebral lateralisation: Developing a formal, causal model. *Psychological Bulletin*, 110, 237 – 253.

Meador-Woodruff, J.H., Greden, J.F. (1988) Effects of psychotropic medications on hypothalamic-pituitary-adrenal regulation. *Endocrinol Metab Clin North Am*. 17(1):225-34.

Meaney, M.J. & McEwen, B.S. (1986) Testosterone implants into the amygdala during the neonatal period masculinise the social play of juvenile male rats. *Brain Research*, 398, 324 – 328.

Meguro, K., Shimada, M., Yamaguchi, S., Ishizaki, J., Ishii, H., Shimada, Y., Sato, M., Yamadori, A. & Sekita, Y. (2001) Cognitive function and frontal lobe atrophy in normal elderly adults: implications for dementia not as ageing-related disorders and the reserve hypothesis. *Psychiatry and Clinical Neurosciences*, 55, 565 – 572.

Melkersson, K.I, Hulting, A.L, Rane, A.J. (2001) Dose requirement and prolactin elevation of antipsychotics in male and female patients with schizophrenia or

related psychoses. *Br J Clin Pharmacol*. 51(4):317-24.

Mellet, E., Bricogne, S., Tzourio-Mazoyer, N., Ghaem, O., Zago, P.L., Etard, O., Berthoz, A., Mazoyer, B. & Dennis, M. (2000) Neural correlates of topographic mental exploration: the impact of route versus survey perspective learning. *NeuroImage*, 12, 588 – 600.

Meltzer, H.Y., Busch, D.A., Fang, V.S. (1983) Serum neuroleptic and prolactin levels in schizophrenic patients and clinical response. *Psychiatry Res*. 9(4):271-83.

Meltzer, H.Y., Goode, D.J., Fang, V.S., Schyve, P., Young, M. (1976) Dopamine and schizophrenia. *Lancet*, 2(7995):1142.

Meltzer, H.Y. (1989) Clinical studies on the mechanism of action of clozapine: the dopamine-serotonin hypothesis of schizophrenia. *Psychopharmacology (Berl)*. 99 Suppl:S18-27.

Merckelbach, H., Muris, P., Pool, K., de Jong, P.J. & Schouten, E. (1996) Reliability and validity of a paper and pencil test measuring hemisphere preference. *European Journal of Personality*, 10, 221 – 231.

Merckelbach, H., Muris, P., Horselenberg, R. & de Jong, P.J. (1997) EEG correlates of paper and pencil test measuring hemisphericity. *Journal of Clinical Psychology*, 53, 739 – 744.

Mesulam, M.M. (1985) Dementia: its definition, differential diagnosis, and subtypes. *JAMA*, 253(17):2559-61.

Mesulam, M.M. (1987) Asymmetry of neural feedback in the organization of behavioral states. *Science*, 237(4814):537-8.

Meurling, A.W., Tonning-Olsson, I. & Levander, S. (2000) Sex differences in strategy and performance on computerised neuropsychological tests as related to gender identity and age at puberty. *Scandinavian Journal of Psychology*, 41, 81 – 90.

Miceli, G., Gainotti, G., Caltagirone, C., Masullo, C. (1980) Some aspects of phonological impairment in aphasia. *Brain Lang.* 11(1):159-69.

Michael, R.P. (1968) *Endocrinology and Human Behaviour*. (London: Oxford University Press).

Miles, C., Green, R., Sanders, G. & Hines, M. (1998) Estrogen and memory in a transsexual population. *Hormones and Behaviour*, 34, 199-208.

Miller, E. (1984) Verbal fluency as a function of a measure of verbal intelligence and in relation to different types of cerebral pathology. *British Journal of Clinical Psychology*, 23: 53 - 57.

Miller, L.K. & Santoni, V. (1986) Sex differences in spatial abilities: Strategic and experiential correlates. *Acta Psychologica*, 62, 225 – 235.

Miller, K.J., Conney, J.C., Rasgon, N.L., Fairbanks, L.A., Small, G.W. (2002). Mood symptoms and cognitive performance in women estrogen users and nonusers and men. *Journal of American Geriatrics Society*, Nov; 50,1826-30.

Milner, B. & Petrides, M. (1984) Behavioural effects of frontal lobe lesions in man. *Trends in Neuroscience*, 7: 403 – 407.

Mirsky, A.F., Duncan, C.C. (1986) Etiology and expression of schizophrenia: neurobiological and psychosocial factors. *Annu Rev Psychol.* 37:291-319.

Mitchell, J.N. & Zucker, K.J. (1991) The recalled childhood gender identity scale: Psychometric properties. Paper presented at the International Academy of Sex Research, Ontario, Canada, August.

Moffat, S.D, Zonderman, A.B, Harman, S.M, Blackman, M.R, Kawas, C, Resnick, S.M. (2000) The relationship between longitudinal declines in dehydroepiandrosterone sulfate concentrations and cognitive performance in older men. *Arch Intern Med.* 24;160(14):2193-8.

Moffat, S.D. & Hampson, E. (2000) Salivary testosterone in left handers: An association with cerebral language dominance. *Neuropsychology*, 14, 71 – 81.

Moffat, S.D., Hampson, E. & Hatzipantelis, M. (1998) Navigation in a virtual maze: Sex differences and correlation with psychometric measures of spatial ability in humans. *Evolution and Human Behaviour*, 19, 73 – 87.

Moffat, S.D., & Hampson, E. (1996). A curvilinear relationship between testosterone and spatial cognition in humans: possible influence of hand preference. *Psychoneuroendocrinology*, 21, 323-337.

Moffat, D.H., Hampson, E. & Lee, D.H. (1998) Morphology of the planum temporale and corpus callosum in left handers with evidence of left and right hemisphere speech representation. *Brain*, 121, 2369 – 2379.

Moffat, S.D., Hampson, E., Wickett, J.C., Vernon, P.A. Lee, D.H. (1997) Testosterone is correlated with regional morphology of the human corpus callosum. *Brain*, 120, 297 – 304.

Moffat, S.D, Zonderman, A.B, Metter, E.J, Blackman, M.R, Harman, S.M, Resnick, S.M. (2002) Longitudinal assessment of serum free testosterone

concentration predicts memory performance and cognitive status in elderly men. *J Clin Endocrinol Metab.* 87(11):5001-7.

Moller, A.P. & Swaddle, J.P. (1997) *Asymmetry, developmental stability and evolution.* (London: Oxford University Press).

Monsch, A.U., Bondi, M.W., Butters, N., Salmon, D.P., Katzman, R. & Thal, L.J. (1992) Comparisons of verbal fluency tasks in the detection of dementia of the Alzheimer type. *Archives of Neurology*, 49: 1253 – 1258.

Morely, J.E, Kaiser, F., Raum, W.J., et al. (1997). Potentially predictive and manipulable blood serum correlates of ageing in the healthy human male: progressive decreases in bioavailable testosterone, dehydroepiandrosterone sulfate, and the ratio of insulin-like growth factor to 1 growth hormone. *Proceedings of the National Academy of sciences, USA*, 94, 7537-7542.

Morley, J.E. (2001) Testosterone replacement in older men and women. *J Gend Specif Med.* 4(2):49-53.

Moscovitch, M. (1994) Memory and working with memory: Evaluation of a component model and comparisons with other models. In Schacter, D., Tulving, E. (Eds.), *Memory Systems.* MIT Press, Cambridge.

Mozley L H, Gur R C, Mozley P D, Gur R E. (2001) Striatal dopamine transporters and cognitive functioning in healthy men and women. *Am J Psychiatry* 158:1492-9.

Mummery, C.J., Patterson, K., Hodges, J.R. & Wise, R.J.S. (1996) Generating ‘tiger’ as an animal name or a word beginning with T: differences in brain activation. *Proceedings of the Royal Society of London, Series B: Biological Sciences*, 263: 989 – 995.

Mumenthaler, M.S., O'Hara, R., Taylor, J.L., Friedman, L., Yesavage, J.A. (2001) Relationship between variations in estradiol and progesterone levels across the menstrual cycle and human performance *Psychopharmacology*, 155, 198-203.

Munro, J.C., Russell, A.J., Murray, R.M., Kerwin, R.W., Jones, P.B. (2002) IQ in childhood psychiatric attendees predicts outcome of later schizophrenia at 21 year follow-up. *Acta Psychiatr Scand.* 106(2):139-42.

Murphy, D.G.M., DeCarli, C., McIntosh, A.R., Daly, E., Mentis, M.J., Pietrini, P., Szczepanik, J., Schapiro, M.B., Grady, C.L., Horwitz, B. & Rapoport, S.I. (1996) Sex differences in human brain morphometry and metabolism: An in vivo quantitative magnetic resonance imaging and positron emission tomography study on the effect of ageing. *Archives of General Psychiatry*, 53, 585 – 594.

Murphy, K., Corfield, D.R., Guz, A., Fink, G.R., Wise, R.J., Harrison, J., Adams, L. (1997) Cerebral areas associated with motor control of speech in humans *J Appl Physiol.* 83:1438-47

Murray, R.M. (1991) Editorial. The neurodevelopmental basis of sex differences in schizophrenia. *Psychological Medicine*, 21, 565-575.

Murray, R.M., O'Callaghan, E., Castle, D.J, Lewis, S.W. (1992) A neurodevelopmental approach to the classification of schizophrenia. *Schizophr Bull.* 18(2):319-32.

Naber, D., Ackenheil, M., Laakman, G., Fischer, H., von Werder, K. (1980) Basal and stimulated levels of prolactin, TSH and LH in serum of chronic schizophrenic patients, long-term treated with neuroleptics. *Pharmakopsychiatr Neuropsychopharmakol.* 13(6):325-30.

Naftolin F, Ryan KJ, Davies IJ, Reddy VV, Flores F, Petro Z, Kuhn M, White RJ, Takaoka Y, Wolin L. (1975) The formation of estrogens by central neuroendocrine tissues. *Recent Prog Horm Res.* 31:295-319.

Naftolin, F., MacLusky, N.J. (1982) Aromatase in the central nervous system. *Cancer Res.* 42(8 Suppl):3274s-3276s.

Narr, K.L., Thompson, P.M., Sharma, T., Moussai, J., Cannestra, A.F., Toga, A.W. (2000) Mapping morphology of the corpus callosum in schizophrenia. *Cereb Cortex.* 10(1):40-9.

Nasrallah, H.A., Schwarzkopf, S.B., Olson, S.C., Coffman, J.A. (1990) Gender differences in schizophrenia on MRI brain scans. *Schizophr Bull.* 16(2):205-10.

Nasrallah, H.A., Andreasen, N.C., Coffman, J.A., Olson, S.C, Dunn, V.D., Ehrhardt, J.C, Chapman, S.M. (1986) A controlled magnetic resonance imaging study of corpus callosum thickness in schizophrenia. *Biol Psychiatry*, 21(3):274-82.

Nass, R., Baker, S. (1991) Androgen effects on cognition: congenital adrenal hyperplasia. *Psychoneuroendocrinology*, 16(1-3):189-201.

Neave, N., Hamilton, C., Tildesley, N., Hutton, L., Gallagher, P & Pickering, A (2000) Female advantage in location memory using ecologically valid measures. *Proceedings of the British Psychological Society*, 8, 40.

Neave, N., Hamilton, C. & Gallagher, P. (1999b) Female advantage in object recall? Some methodological considerations. *Proceedings of the British Psychological Society*, 1, 133.

Neave, N, Menaged, M & Weightman, D.R. (1999a) Sex differences in cognition: The role of testosterone and sexual orientation. *Brain & Cognition*, 41, 245-262.

Nebot TK. (1988) Sex differences among children on embedded tasks. *Percept Mot Skills*, 67(3), 972-4.

Negri-Cesi, P., Poletti, A., Martini, L. & Piva, F (2000) Steroid metabolism in the brain: Role in sexual differentiation. In Matsumoto, A. (Ed) *Sexual differentiation of the brain*. (Florida: CRC Press).

Nelson H E (1982). *National Adult Reading Test*. NFER-Nelson Publishing Company Ltd.

Nelson, H.E., Pantelis, C., Carruthers, K., Speller, J., Baxendale, S., Barnes, T.R. (1990) Cognitive functioning and symptomatology in chronic schizophrenia. *Psychol Med*. 20(2):357-65.

Nelson, J.F., Karelus, K., Bergman, M.D., Felicio, L.S. (1995) Neuroendocrine involvement in aging: evidence from studies of reproductive aging and caloric restriction. *Neurobiol Aging*, 16(5):837-43

Nelson, C.A., Monk, C.S., Lin, J., Carver, L.J., Thomas, K.M., Truwit, C.L. (2000) Functional neuroanatomy of spatial working memory in children. *Dev Psychol*. 36(1):109-16.

Newcomber, F. (1969) *Missile wounds of the brain*. London: Oxford University Press.

Newcombe, N., Dubas, J.S. & Baenninger, M.A. (1989) Associations of timing of puberty, spatial ability and lateralization in adult women. *Child Development*, 60, 246 – 254.

Newcomer JW, Selke G, Melson AK, Hershey T, Craft S, Richards K, Alderson AL. (1999) Decreased memory performance in healthy humans induced by stress-

level cortisol treatment. *Arch Gen Psychiatry*. 56(6):527-33.

Newcomer JW, Craft S, Hershey T, Askins K, Bardgett ME. (1994)
Glucocorticoid-induced impairment in declarative memory performance in adult humans. *J Neurosci*. 14(4):2047-53.

Newcomer J W, Faustman W O, Whiteford H A, Moses J A Jr, Csernansky JG (1991)
Symptomatology and cognitive impairment associate independently with post-dexamethasone cortisol concentrations in unmedicated schizophrenic patients. *Biol. Psychiatr*. 29: 855-864.

Newcomer J W, Craft S, Askins K, Hershey T, Bardgett M E, Csernansky J G, et al.
(1998) Glucocorticoid interactions with memory function in schizophrenia. *Psychoneuroendocrinology* 23, 65-72.

Newlin, D.B., Carpenter, B., Golden, C.J. (1981) Hemispheric asymmetries in schizophrenia. *Biol Psychiatry*. 16(6):561-82.

Ng, V.W.K., Bullmore, E.T., de Zubicaray, G.I., Cooper, A., Suckling, J. & Williams, S.C.R. (2001) Identifying rate-limiting nodes in large scale cortical networks for visuospatial processing: An illustration using fMRI. *Journal of Cognitive Neuroscience*, 13, 537 – 545.

Ng, V.W.K., Eslinger, P.J., Williams, S.C.R., Brammer, M.J., Bullmore, E.T., Andrew, C.M., Suckling, J., Morris, R.G. & Benton, A.L. (2000) Hemispheric preference in visuospatial processing: A complementary approach with fMRI and lesion studies. *Human Brain Mapping*, 10, 86 – 86.

Nobre, A.C., Gitelman, D.R., Dias, E.C., Mesulam, M.M. (2000) Covert visual spatial orienting and saccades: overlapping neural systems *Neuroimage*. 11:210-6.

Nopoulos, P., Flaum, M., O'Leary, D. & Andreasen, N.A. (2000) Sexual dimorphism in the human brain: Evaluation of tissue volume, tissue composition and surface anatomy using magnetic resonance imaging. *Psychiatry Research: Neuroimaging*, 98, 1 – 13.

Nopoulos, P., Flaum, M., Andreasen, N.C. (1997) Sex differences in brain morphology in schizophrenia. *Am J Psychiatry*. 154(12):1648-54.

Nordstrom AL, Olsson H, Halldin C. (1998) A PET study of D2 dopamine receptor density at different phases of the menstrual cycle. *Psychiatry Res*. 83(1):1-6

Nunn, J.A., Graydon, F.J.X., Polkey, C.E. & Morris, R.G. (1999) Differential spatial memory impairment after right temporal lobectomy demonstrated using temporal titration. *Brain*, 122, 47 – 59.

Nunn, J.A., Polkey, C.E. & Morris, R.G. (1998) Selective spatial memory impairment after right unilateral temporal lobectomy. *Neuropsychologia*, 36, 837 – 848.

Nyborg, H. (1994) The neuropsychology of sex-related differences in brain and specific abilities. In Venon, P.A. (Ed) *The Neuropsychology of Individual Differences* (Academic Press).

Oades RD, Schepker R. (1994) Serum gonadal steroid hormones in young schizophrenic patients. *Psychoneuroendocrinology*. 19(4):373-85.

O'Connor, D.B., Archer, J., Hair, W.M. & Wu, F.C.W. (2001) Activational effects of testosterone on cognitive function in men. *Neuropsychologia*, 39, 1385 – 1394.

Office of Population Census and Surveys (1991) Standard Occupational Classification (London: HMSO).

Ogawa, S. & Pfaff, D.W. (2000) Genetic contributions to the sexual differentiation of behaviour. In Matsumoto, A. (Ed) *Sexual differentiation of the brain*. (Florida: CRC Press)

Oka, S., Miyamoto, O., Janjua, N.A., Honjo-Fujiwara, N., Ohkawa, M., Nagao, S., Kondo, H., Minami, T., Toyoshima, T. & Itano, T. (1999) Re-evaluation of sexual dimorphism in human corpus callosum. *NeuroReport*, 10, 937-940

O'Keefe, J. & Nadel, L. (1978) *The hippocampus as a cognitive map*. Oxford: Oxford University Press.

Oldfield, R.C. (1971) The assessment and analysis of handedness: The Edinburgh inventory. *Neuropsychologia*, 9, 97-113.

Ornitz, E.M., Guthrie, D., Sadeghpour, M., Sugiyama, T. (1991) Maturation of prestimulation-induced startle modulation in girls. *Psychophysiology*. 28:11-20.

Ostatnikova, D, Dohnanyiova, M, Mataseje, A, Putz, Z, Laznibatova, J, Hajek J. (2000) Salivary testosterone and cognitive ability in children. *Bratisl Lek Listy*, 101(8):470-3.

Osterlund, M.K, Hurd, Y.L. (2001) Estrogen receptors in the human forebrain and the relation to neuropsychiatric disorders. *Prog Neurobiol*. 64 (3):251-67.

Otani, K., Kondo, T., Ishida, M., Tanaka, O., Yasui, N., Suzuki, A., Kaneko, S. (1996) Plasma prolactin concentration and psychopathology of schizophrenia. *Prog Neuropsychopharmacol Biol Psychiatry*. 20(8):1369-74.

Owens, J.C., and Brioda, J. (1998). A sex difference in the effect of low levels of caffeine on the Stroop task. *Psi Chi Journal of Undergraduate Research*, 5, 60-73.

Owen, A.M., Milne, B., Petrides, M. & Evans, A.C. (1996) A specific role for the right parahippocampal gyrus in the retrieval of object-location: A positron emission tomography study. *Journal of Cognitive Neuroscience*, 8, 588 – 602.

Pantelis, C., Barnes, T.R., Nelson, H.E., Tanner, S., Weatherley, L., Owen, A.M., Robbins, T.W. (1997) Frontal-striatal cognitive deficits in patients with chronic schizophrenia. *Brain*, 120 (Pt 10):1823-43.

Parameswaran, G. (1995) Gender difference in horizontality performance before and after training. *Journal of Genetic Psychology*, 156, 105 – 113.

Pardo, J.V., Pardo, P.J., Janer, K.W., Raichle, M.E. (1990) The anterior cingulate cortex mediates processing selection in the Stroop attentional conflict paradigm. *Proc Natl Acad Sci U S A*. 87(1):256-9.

Park, S., Holzman, P.S. (1992) Schizophrenics show spatial working memory deficits. *Arch Gen Psychiatry*, 49(12):975-82.

Parkin, A.J. & Java, R.I. (1999) Deterioration of frontal lobe function in normal aging: influence of fluid intelligence versus perceptual speed. *Neuropsychology*, 13, 539 - 545.

Paulesu, E., Frith, C.D. & Frackowiak, R.S.J. (1993) The neural correlates of the verbal component of working memory. *Nature*, 362, 342 – 345.

Paulesu, E., Goldacre, B., Scifo, P., Cappa, S.F., Gilardi, M.C., Castiglioni, I., Perani, D. & Fazio, F. (1997) Functional heterogeneity of left inferior frontal cortex as revealed by fMRI. *NeuroReport*, 8, 2011-2016.

Penades, R., Gasto, C., Boget, T., Catalan, R., Salamero, M. (2001) Deficit in schizophrenia: the relationship between negative symptoms and neurocognition. *Compr Psychiatry*. 42(1):64-9.

Penhune, V.B., Zatorre, R.J., MacDonald, J.D. & Evans, A.C. (1996) Interhemispheric anatomical differences in human primary auditory cortex: probabilistic mapping and volume measurement from magnetic resonance scans. *Cerebral Cortex*, 6, 661 – 672.

Pearlson, G.D., Schlaepfer, T.E. (1997) Sex differences in schizophrenia. *Arch Gen Psychiatry*. 54(2):189.

Pearlson, G.D., Kreger, L., Rabins, P.V., Chase, G.A., Cohen, B., Wirth, J.B., Schlaepfer, T.B., Tune, L.E. (1989) A chart review study of late-onset and early-onset schizophrenia. *Am J Psychiatry*, 146(12):1568-74.

Pearlson, G.D., Kim, W.S., Kubos, K.L., Moberg, P.J., Jayaram, G., Bascom, M.J., Chase, G.A., Goldfinger, A.D., Tune, L.E. (1989) Ventricle-brain ratio, computed tomographic density, and brain area in 50 schizophrenics. *Arch Gen Psychiatry*, 46(8):690-7.

Pearlson, G.D., Garbacz, D.J., Moberg, P.J., Ahn, H.S., DePaulo, J.R. (1985) Symptomatic, familial, perinatal, and social correlates of computerized axial tomography (CAT) changes in schizophrenics and bipolars. *J Nerv Ment Dis*. 173(1):42-50.

Perlick, D., Mattis, S., Stastny, P., Teresi, J. (1992) Gender differences in cognition in schizophrenia. *Schizophr Res.* 8(1):69-73.

Perlstein, W.M., Carter, C.S., Noll, D.C., Cohen, J.D. (2001) Relation of prefrontal cortex dysfunction to working memory and symptoms in schizophrenia. *Am J Psychiatry.* 158(7):1105-13.

Pernicano, K.M. (1986) Score differences in WAIS-R scatter for schizophrenics, depressives, and personality disorders: a preliminary analysis. *Psychol Rep.* 59(2 Pt 1):539-43.

Perry PJ, Lund BC, Arndt S, Holman T, Bever-Stille KA, Paulsen J, Demers LM. (2001) Bioavailable testosterone as a correlate of cognition, psychological status, quality of life, and sexual function in aging males: implications for testosterone replacement therapy. *Ann Clin Psychiatry.* 13(2):75-80

Peterson, B.S., Skudlarski, P., Gatenby, C., Zhang, H., Anderson, A.W., Gore, J.C. (1999) An fMRI study of stroop word-colour Interference: Evidence for cingulated subregions subserving multiple distributed attentional systems. *Society of Biological Psychiatry*, 45, 1237 – 1258.

Petty, R.G. (1999) Prolactin and antipsychotic medications: mechanism of action. *Schizophr Res.* 1;35 Suppl:S67-73.

Pezaris, E. & Casey, M.B. (1991) Girls who use “masculine” problem solving strategies on a spatial task: Proposed genetic and environmental factors. *Brain & Cognition*, 17, 1-22.

Phelps, E.A., Hyder, F., Blamire, A.M. & Shulman, R.G. (1997) FMRI of the prefrontal cortex during overt verbal fluency. *NeuroReport*, 8, 561-565.

Philips, S.M., & Sherwin, B.B. (1992). Variations in memory function and sex steroid

hormones across the menstrual cycle. *Psychoneuroendocrinology*, 17, 497-506.

Phillips, K. & Silverman, I. (1997) Differences in the relationship of menstrual cycle phase to spatial performance on two- and three-dimensional tasks. *Hormones & Behaviour*, 32, 167 – 175.

Phillips, M.D., Lurito, J.T., Dziedzic, M., Lowe, M.J., Wang, Y., Mathews, V.P. (2000) Gender based differences in temporal lobe activation demonstrated using a novel passive listening paradigm. *Neuroimage*, 11, S352

Pigott, S. & Milner, B. (1993) Memory for different aspects of complex scenes after unilateral temporal or frontal lobe resection. *Neuropsychologia*, 31, 1 – 15.

Pihlajamäki, M., Tanila, H., Hanninen, T., Kononen, M., Laakso, M., Partanen, K., Soininen, H., Aronen, H.J. (2000) Verbal fluency activates the left medial temporal lobe: a functional magnetic resonance imaging study. *Ann Neurol*. 47(4):470-6.

Pind, J., Gunnardottir, E.K. & Johannesson, H.S. (in press) Raven's standard progressive matrices: new school age norms and a study of the test's validity. *Personality and Individual Differences*.

Piran, N., Bigler, E.D., Cohen, D. (1982) Motoric laterality and eye dominance suggest unique pattern of cerebral organization in schizophrenia. *Arch Gen Psychiatry*, 39(9):1006-10.

Pomerleau, C.S., Teuscher, F., Goeters, S., & Pomerleau, O.F. (1994). Effects of nicotine abstinence and menstrual phase on task performance. *Addictive Behaviors*, 19, 357-362.

Portin R, Polo-Kantola P, Polo O, Koskinen T, Revonsuo A, Irjala K, Erkkola R. (1999) Serum estrogen level, attention, memory and other cognitive functions in middle-aged women. *Climacteric*, 2, 115-23.

Postma, A., Izendoorn, R. & De Haan, E.H.F. (1998) Sex differences in object location memory. *Brain & Cognition*, 36, 334 – 345.

Postma, A., Meyer, G., Tuiten, A., van Honk, J., Kessels, R.P.C. & Thijssen, J. (2000) Effects of testosterone administration on selective aspects of object-location memory in healthy young women. *Psychoneuroendocrinology*, 25, 563 – 575.

Postma, A., Winkel, J., Tuiten, A. & van Honk, J. (1999) Sex differences and menstrual cycle effects in human spatial memory. *Psychoneuroendocrinology*, 24, 175 – 192.

Podzebenko K, Egan G.F, Watson J.D. (2002) Widespread dorsal stream activation during a parametric mental rotation task, revealed with functional magnetic resonance imaging. *Neuroimage*. 15(3):547-58.

Portin R, Polo-Kantola P, Polo O, Koskinen T, Revonsuo A, Irjala K, Erkkola R. (1999) Serum estrogen level, attention, memory and other cognitive functions in middle-aged women. *Climacteric*, 2(2):115-23.

Posner, M.I., Early, T.S., Reiman, E., Pardo, P.J., Dhawan, M. (1988) Asymmetries in hemispheric control of attention in schizophrenia. *Arch Gen Psychiatry*, 45(9):814-21.

Postle, B.R., Zarahn, E., D'Esposito, M. (2000) Using event-related fMRI to assess delay-period activity during performance of spatial and nonspatial working memory tasks. *Brain Res Brain Res Protoc*. 5(1):57-66.

Postle, B.R., Stern, C.E., Rosen, B.R., Corkin, S. (2000) An fMRI investigation of cortical contributions to spatial and nonspatial visual working memory. *Neuroimage*, 11(5 Pt 1):409-23.

Price, C.J., Moore, C.J., Humphreys, G.W., Frackowiak, R.S., Friston, K.J. (1996) The neural regions sustaining object recognition and naming. *Proc R Soc Lond B Biol Sci.* 263(1376):1501-7.

Prinzel, L.J. & Freeman, F.G. (1995) Sex differences in visuo-spatial ability: Task difficulty, speed accuracy trade-off, and other performance factors. *Canadian Journal of Experimental Psychology*, 49, 530 – 539.

Pugh, K.R., Shaywitz, B.A., Shaywitz, S.E., Constable, R.T., Skudlarski, P., Fulbright, R.K., Bronen, R.A., Shankweiler, D.P., Katz, L., Fletcher, J.M. & Gore, J.C. (1996) Cerebral organization of component processes in reading. *Brain*, 119, 1221-1238.

Pugh, K.R., Shaywitz, B.A., Shaywitz, S.E., Shankweiler, D.P., Katz, L., Fletcher, J.M., Skudlarski, P., Fulbright, R.K., Constable, R.T., Bronen, R.A., Lacadie, C. & Gore, J.C: (1997) Predicting reading performance from neuroimaging profiles. The cerebral basis of phonological effects in printed word identification. *Journal of Experimental Psychology: Human Perception and Performance*, 23, 299 – 318.

Purcell, D.W., Lewine, R.R., Caudle, J., Price, L.R. (1998) Sex differences in verbal IQ-performance IQ discrepancies among patients with schizophrenia and normal volunteers. *J Abnorm Psychol.* 107(1):161-5.

Puy, L., MacLusky, N.J., Becker, L., Karsan, N., Trachtenberg, J. & Brown, T.J. (1995) Immunocytochemical detection of androgen receptor in human temporal cortex: Characterisation and application of polyclonal androgen receptor antibodies

in frozen and paraffin-embedded tissues. *Journal of Steroid Biochemistry and Molecular Biology*, 55, 197 – 209.

Quissell, D.O. (1993). Steroid hormone analysis in human saliva. *Annals of the New York Academy of Sciences*, 694, 143-145.

Ragland, J.D., Coleman, A.R., Gur, R.C., Glahn, D.C. & Gur, R.E. (2000) Sex differences in brain-behaviour relationships between verbal episodic memory and resting regional blood flow. *Neuropsychologia*, 38, 451 – 461.

Ragland, J.D, Gur, R.E, Klimas, B.C, McGrady, N, Gur, R.C. (1999) Neuropsychological laterality indices of schizophrenia: interactions with gender. *Schizophr Bull.* 25(1):79-89.

Ragland, J.D., Turetsky, B.I, Gur, R.C., Gunning-Dixon, F., Turner, T., Schroeder, L., Chan, R., Gur, R.E. (2002) Working memory for complex figures: an fMRI comparison of letter and fractal n-back tasks. *Neuropsychology*, 16(3):370-9.

Ragland, J.D., Goldberg, T.E., Wexler, B.E., Gold, J.M., Torrey, E.F., Weinberger, D.R. (1992) Dichotic listening in monozygotic twins discordant and concordant for schizophrenia. *Schizophr Res.* 7(2):177-83.

Rao, M.L., Strebel, B., Halaris, A., Gross, G., Braunig, P., Huber, G., Marler, M. (1995) Circadian rhythm of vital signs, norepinephrine, epinephrine, thyroid hormones, and cortisol in schizophrenia. *Psychiatry Res.* 57(1):21-39.

Rapp, S.R, Espeland, M.A, Shumaker, S.A, Henderson, V.W, Brunner, R.L, Manson, J.E, Gass, M.L, Stefanick, M.L, Lane, D.S, Hays, J, Johnson, K.C, Coker, L.H, Dailey, M, Bowen, D; WHIMS Investigators. (2003) Effect of estrogen plus progestin on global cognitive function in postmenopausal women: the Women's

Health Initiative Memory Study: a randomized controlled trial. *JAMA*, 289(20):2663-72.

Ramos, J.A., Pais, J.R., Cebeira, M., Fernandez-Ruiz, J. (1987) Role of estrogens on striatal dopaminergic activity. *J Steroid Biochem.* 27(4-6):683-9.

Randall, V.A (1994) Role of 5 alpha-reductase in health and disease. *Baillieres Clinical Endocrinology and Metabolism*, 8, 405 – 413.

Randolph, C., Gold, J.M., Carpenter, C.J., Goldberg, T.E., Weinberger, D.R. (1993) Implicit memory in patients with schizophrenia and normal controls: effects of task demands on susceptibility to priming. *J Clin Exp Neuropsychol.* 15(6):853-66.

Raven, J.C. (1958) *Guide to Standard Progressive Matrices.* (New York: Psychological Corporation).

Raven, J.C., Court, J.H. & Raven, J. (1986) *Manual for Raven's progressive matrices and vocabulary scales.* (London: HK Lewis).

Raz, S., Raz, N. (1990) Structural brain abnormalities in the major psychoses: a quantitative review of the evidence from computerized imaging. *Psychol Bull.* 108(1):93-108.

Reavis, R. & Overman, W.H. (2001) Adult sex differences on a decision-making task previously shown to depend on the orbital prefrontal cortex. *Behavioural Neuroscience*, 115, 196 – 206.

Reed, R.A., Harrow, M., Herbener, E.S., Martin, E.M. (2002) Executive function in schizophrenia: is it linked to psychosis and poor life functioning? *J Nerv Ment Dis.* 190(11):725-32.

Reichenberg, A., Weiser, M., Rabinowitz, J., Caspi, A., Schmeidler, J., Mark, M., Kaplan, Z., Davidson, M. (2002) A population-based cohort study of premorbid intellectual, language, and behavioral functioning in patients with schizophrenia, schizoaffective disorder, and nonpsychotic bipolar disorder. *Am J Psychiatry*, 159(12):2027-35.

Reite, M., Sheeder, J., Teale, P., Adams, M., Richardson, D., Simon, J., Jones, R.H, Rojas, D.C. (1997) Magnetic source imaging evidence of sex differences in cerebral lateralization in schizophrenia. *Arch Gen Psychiatry*, 54(5):433-40.

Riecher-Rossler A. (2002) Oestrogen effects in schizophrenia and their potential therapeutic implications--review. *Arch Women Ment Health*, 5(3):111-8.

Riecher-Rossler, A, Seeman, M.V. (2002) Oestrogens and schizophrenia--introduction. *Arch Women Ment Health*. 5(3):91-2.

Riecher-Rossler, A, Hafner, H. (2000) Gender aspects in schizophrenia: bridging the border between social and biological psychiatry. *Acta Psychiatr Scand Suppl*. 102(407):58-62.

Riecher-Rossler A, Hafner H, Dutsch-Strobel A, Oster M, Stumbaum M, van Gulick-Bailer M, Löffler W. (1994) Further evidence for a specific role of estradiol in schizophrenia? *Biol Psychiatry*. 36(7):492-4.

Riecher-Rossler, A, Hafner, H, Stumbaum, M, Maurer, K, Schmidt, R. (1994) Can estradiol modulate schizophrenic symptomatology? *Schizophr Bull*. 20(1):203-14.

Riecher-Rossler, A, Hafner H. (1993) Schizophrenia and oestrogens--is there an association? *Eur Arch Psychiatry Clin Neurosci*. 242(6):323-8.

Reinisch, J.M., Ziemba-Davis, M., Sanders, S.A. (1991) Hormonal contributions to sexually dimorphic behavioral development in humans. *Psychoneuroendocrinology*, 16, 213-78.

Reinisch, J.M., Sanders, S.A. (1992) Effects of prenatal exposure to diethylstilbestrol (DES) on hemispheric laterality and spatial ability in human males. *Horm Behav.* 26(1):62-75.

Reiss, A.L., Abrams, M.T., Singer, H.S., Ross, J.L. & Denckla, M.B. (1996) Brain development, gender and IQ in children. A volumetric imaging study. *Brain*, 119, 1763 – 1774.

Reitan RM, Wolfson D (1985) *The Halstead-Reitan Neuropsychological Test Battery: Theory and Clinical Interpretation*. Tuscon, Ariz: Neuropsychology Press.

Rescher, B. & Rappelsberger, P. (1999) Gender dependent EEG changes during a mental rotation task. *International Journal of Psychophysiology*, 33, 209 – 222

Resnick, S.M. (1993) Sex differences in mental rotations: an effect of time limits. *Brain and Cognition*, 21, 71 – 79.

Resnick, S.M., Berenbaum, S., Gottesman, I. & Bouchard, T. (1986) Early hormonal influences on cognitive functioning in congenital adrenal hyperplasia. *Developmental Psychology*, 22, 191 – 198.

Resnick, S.M., Maki, P.M. (2001) Effects of hormone replacement therapy on cognitive and brain aging. *Ann N Y Acad Sci.* 949:203-14.

Resnick, S.M., Maki, P.M., Golski, S., Kraut, M.A., Zonderman, A.B. (1998) Effects of estrogen replacement therapy on PET cerebral blood flow and neuropsychological performance. *Horm Behav.* 34(2):171-82.

Resnick, S.M., Metter, E.J., Zonderman, A.B. (1997) Estrogen replacement therapy and longitudinal decline in visual memory. A possible protective effect? *Neurology*, 49(6):1491-7.

Rey, A. (1964). *L'examen clinique en psychologie*. Presses Universitaires de France, Paris.

Rice MM, Graves AB, McCurry SM, Gibbons LE, Bowen JD, McCormick WC, Larson EB. (2002) Postmenopausal estrogen and estrogen-progestin use and 2-year rate of cognitive change in a cohort of older Japanese American women: The Kame Project. *Arch Intern Med*. 160(11):1641-9.

Richter, W., Ugurbil, K., Georgopoulos, A. & Kim, S.G. (1997) Time resolved fMRI of mental rotation. *NeuroReport*, 8, 3697-3702.

Riley, E.M., McGovern, D., Mockler, D., Doku, V.C., O'Ceallaigh, S., Fannon, D.G., Tennakoon, L., Santamaria, M., Soni, W., Morris, R.G., Sharma, T. (2000) Neuropsychological functioning in first-episode psychosis--evidence of specific deficits. *Schizophr Res*. 25;43(1):47-55.

Ring, N., Tantam, D., Montague, L., Morris, J. (1991) Negative symptoms in chronic schizophrenia. Relationship to duration of illness. *Br J Psychiatry*, 159:495-9.

Rissman EF, Wersinger SR, Fugger HN, Foster TC. (1999) Sex with knockout models: behavioral studies of estrogen receptor alpha. *Brain Res*. 835(1):80-90.

Roberts, J.E. & Bell, M.A. (2000) Sex differences on a mental rotation task: variations in electroencephalogram hemispheric activation between children and college students. *Developmental Neuropsychology*, 17, 199 – 223.

Robert, M. & Harel, F. (1996) The gender difference in orienting liquid surfaces and plumb-lines: Its robustness, its correlates and the associated knowledge of simple physics. *Canadian Journal of Experimental Psychology*, 50, 280 – 314.

Robinson, D., Friedman, L., Marcus, R., Tinklenberg, J., Yesavage, J. (1994) Estrogen replacement therapy and memory in older women. *J Am Geriatr Soc.* 42(9):919-22.

Rojas, D.C., Teale, P., Sheeder, J., Simon, J., Reite, M. (1997) Sex-specific expression of Heschl's gyrus functional and structural abnormalities in paranoid schizophrenia. *Am J Psychiatry*, 154(12):1655-62.

Roof, R.L. (1993) Neonatal exogenous testosterone modifies sex difference in radial arm and Morris water maze performance in prepubescent and adult rats. *Behavioural Brain Research*, 53, 1 – 10.

Roof, R.L., Havens, M.D. (1992) Testosterone improves maze performance and induces development of a male hippocampus in females. *Brain Res.* 14;572(1-2):310-3.

Roof, R.L., Zhang, Q., Glasier, M.M. & Stein, D.G. (1993) Gender specific impairment on Morris water maze task after entorhinal cortex lesion. *Behavioural Brain Research*, 57, 47 – 51.

Rosen, H.J., Ojemann, J.G, Ollinger, J.M., Petersen, S.E. (2000) Comparison of brain activation during word retrieval done silently and aloud using fMRI *Brain Cogn.* 42 :201-17.

Rosenberg L, Park S. (2002) Verbal and spatial functions across the menstrual cycle in healthy young women. *Psychoneuroendocrinology*, 27, 835-841.

Ross, J.L, Roeltgen, D, Feuillan, P, Kushner, H, Cutler, G.B Jr. (1998) Effects of estrogen on nonverbal processing speed and motor function in girls with Turner's syndrome. *J Clin Endocrinol Metab.* 83(9):3198-204.

Ross, J.L, Roeltgen, D, Feuillan, P, Kushner, H, Cutler, G.B Jr. (2000) Use of estrogen in young girls with Turner Syndrome. Effects on memory. *Neurology*, 54, 164-195.

Ross, J.L, Stefanatos, G.A, Kushner, H, Zinn, A, Bondy, C, Roeltgen, D. (2002) Persistent cognitive deficits in adult women with Turner syndrome. *Neurology*. 58(2):218-25.

Rossell, S.L., Bullmore, E.T., Williams, S.C.R. & David, A.S. (2002) Sex differences in functional brain activation during a lexical visual field task. *Brain & Language*, 80, 97 – 105.

Rosser, R.A., Ensing, S.S., Gilder, P.J. & Lane, S. (1984) An information-processing analysis of children's accuracy in predicting the appearance of rotated stimuli. *Child Development*, 55, 2204 – 2211.

Rossi, A., Stratta, P., Di Michele, V., Gallucci, M., Splendiani, A., de Cataldo, S., Casacchia, M. (1991) Temporal lobe structure by magnetic resonance in bipolar affective disorders and schizophrenia. *J Affect Disord.* 21(1):19-22.

Rouxel, G. (2000). Cognitive-affective determinants in performance on mathematical and verbal domains-Gender differences. *Learning and Individual Differences*, 12, 287-310.

Rovet, J. (1983) Cognitive and neuropsychological test performance of persons with abnormalities of adolescent development: A test of Waber's hypothesis. *Child Development*, 54, 941-950.

Royer, F.L. (1971) Information processing of visual figures in the digit symbol substitution task. *Journal of Experimental Psychology*, 87, 335 – 342.

Roy, M.A., Maziade, M., Labbe, A., Merette, C. (2001) Male gender is associated with deficit schizophrenia: a meta-analysis. *Schizophr Res.* 47(2-3):141-7.

Roy, A., Gold, P., Pickar, D., Wolkowitz, O.M., Chrousos, G., Paul, S.M. (1986) Pre- and post-dexamethasone plasma ACTH levels in depressed patients and normal controls. *J Affect Disord.* 10(2):95-9.

Rubia, K., Russell, T., Bullmore, E.T., Soni, W., Brammer, M.J., Simmons, A., Taylor, E., Andrew, C., Giampietro, V., Sharma, T. (2001) An fMRI study of reduced left prefrontal activation in schizophrenia during normal inhibitory function. *Schizophr Res.* 52(1-2):47-55.

Rubinow, D.R., Schmidt, P.J. (1996) Androgens, brain, and behavior. *Am J Psychiatry.* 153(8):974-84.

Ruble, D.N. & Martin, C.L. (1998) Gender development. In Damon, W. & Eisenberg, N (Eds). *Handbook of child psychology: social, emotional and personality development*, 5th Ed, Vol. 3. (New York: Wiley).

Rueckert, L., Appollonio, I., Grafman, J., Jezard, P., Johnson, R Jr., Le Bihan, D., Turner, R. (1994) Magnetic resonance imaging functional activation of left frontal cortex during covert word production *J Neuroimaging.* 4:67-70.

- Ruff, C.C., Woodward, T.S., Laurens, K.R., Liddle, P.F. (2001) The role of the anterior cingulate cortex in conflict processing: evidence from reverse stroop interference. *Neuroimage*, 14(5):1150-8.
- Rupprecht, R., Koch, M., Montkowski, A., Lancel, M., Faulhaber, J., Harting, J., Spanagel, R. (1999) Assessment of neuroleptic-like properties of progesterone. *Psychopharmacology (Berl)*. 143(1):29-38.
- Russell, J.M., Early, T.S., Patterson, J.C., Martin, J.L., Villanueva-Meyer, J., McGee, M.D. (1997) Temporal lobe perfusion asymmetries in schizophrenia. *J Nucl Med*. 38(4):607-12.
- Russo, P., Persegani, C., Papeschi, L.L., Nicolini, M. & Trimarchi, M. (2001) Sex differences in EEG correlates of a self-reported measure of hemisphere preference. *International Journal of Neuroscience*, 106, 109 – 121.
- Russo, P., Persegani, C., Papeschi, L.L., Nicolini, M. & Trimarchi, M. (2000) Sex differences in hemisphere preference as assessed by a paper and pencil test. *International Journal of Neuroscience*, 100, 29 – 37.
- Rybakowski J, Linka M, Matkowski K, Kanarowski R (1991): Dexamthasone suppression test and the positive and negative symptoms of schizophrenia. *Psychiatr. Pol* 25: 9-15.
- Sakuma, M., Hoff, A.L., DeLisi, L.E. (1996) Functional asymmetries in schizophrenia and their relationship to cognitive performance. *Psychiatry Res*. 65(1):1-13.
- Salokangas RK. (1993) First-contact rate for schizophrenia in community psychiatric care. Consideration of the oestrogen hypothesis. *Eur Arch Psychiatry Clin Neurosci*. 242(6):337-46.

Salokangas RK. (1995) Gender and the use of neuroleptics in schizophrenia. Further testing of the oestrogen hypothesis. *Schizophr Res.* 16(1):7-16.

Sanders, G., Sjodin, M. & de Chastelaine, M. (2002) On the elusive nature of sex differences in cognition: hormonal influences contributing to within-sex variation. *Archives of Sexual Behaviour*, 31, 145 – 152.

Sanders, G. Wenmoth, D. (1998) Verbal and music dichotic listening tasks reveal variations in functional cerebral asymmetry across the menstrual cycle that are phase and task dependent. *Neuropsychologia*, 36, 869-874.

Sandstrom, N.J., Kaufman, J. & Huettel, S.A. (1998) Males and females use different distal cues in a virtual environment navigation task. *Cognitive Brain Research*, 6, 351 – 360.

Sands, R., Studd, J. (1995) Exogenous androgens in postmenopausal women. *Am J Med.* 98(1A):76S-79S.

Sapolsky, R.M, Krey, L.C, McEwen, B.S. (1985) Prolonged glucocorticoid exposure reduces hippocampal neuron number: implications for aging. *J Neurosci.* 5(5):1222-7.

Saucier, D.M., McCreary, D.R. & Saxberg, J.K.J. (2002) Does gender role socialisation mediate sex differences in mental rotations? *Personality and Individual Differences*, 32, 1101 – 1111.

Save, E., Poucet, B., Foreman, N. & Thinus-Blanc, C. (1998) The contribution of the associative parietal cortex and hippocampus to spatial processing in rodents. *Psychobiology*, 26, 153 - 161.

Savic, I. & Engel, J. (1998) Sex differences in patients with mesial temporal lobe epilepsy. *Journal of Neurology, Neurosurgery and Psychiatry*, 65, 910 – 912.

Saykin, A.J., Shtasel, D.L., Gur, R.E., Kester, D.B., Mozley, L.H., Stafiniak, P., Gur, R.C. (1994) Neuropsychological deficits in neuroleptic naive patients with first-episode schizophrenia. *Arch Gen Psychiatry*, 51(2):124-31.

Saykin, A.J., Gur, R.C., Gur, R.E., Mozley, P.D., Mozley, L.H., Resnick, S.M., Kester, D.B., Stafiniak, P. (1991) Neuropsychological function in schizophrenia. Selective impairment in memory and learning. *Arch Gen Psychiatry* 48(7):618-24.

Schaie, K.W. & Willis, S.L. (1993) Age difference patterns of psychometric intelligence in adulthood: generalizability within and across ability domains. *Psychology and Ageing*, 8, 44 – 55.

Scheller-Gilkey, G., Lewine, R.R. (1999) Age at onset and sex differences in corpus callosum area in schizophrenia. *Schizophr Res.* 40(3):229-35.

Schlaepfer, T.E., Harris, G.J., Tien, A.Y., Peng, L., Lee, S. & Pearlson, G.D. (1995) Structural differences in the cerebral cortex of healthy female and male subjects: a magnetic resonance imaging study. *Psychiatry Research: Neuroimaging*, 61, 129-135.

Schlosser, R., Hutchinson, M., Joseffer, S., Rusinek, H., Saarimaki, A. Stevenson, J., Dewey, S.L. & Brodie, J.D. (1998) Functional magnetic resonance imaging of human brain activity in a verbal fluency task. *Journal of Neurology, Neurosurgery & Psychiatry*, 64, 492-498.

Schmidt, R., Fazekas, F., Reinhart, B., Kapeller, P., Fazekas, G., Offenbacher, H., Eber, B., Schmacher, M. and Freidl, W., 1996. Estrogen replacement therapy in

older women: a neuropsychological and brain MRI study. *Journal of the American Geriatrics Society* 44 11, pp. 1307–1313.

Schmitz, S. (1997) Gender-related strategies in environmental development: effects of anxiety on wayfinding in and representation of a three-dimensional maze. *Journal of Environmental Psychology*, 17, 215 – 228.

Seeman, M.V. (2002) The role of sex hormones in psychopathology: focus on schizophrenia. *Prim Care*. 29(1):171-82, viii.

Seeman, M.V, Lang, M. (1990) The role of estrogens in schizophrenia gender differences. *Schizophr Bull*. 16(2):185-94.

Seeman, M.V. (1989) Prenatal gonadal hormones and schizophrenia in men and women. *Psychiatr J Univ Ott*. 14(3):473-5.

Seeman, M.V. (1997) Psychopathology in women and men: focus on female hormones. *Am J Psychiatry*. 154(12):1641-7.

Seeman, M.V. (1996) The role of estrogen in schizophrenia. *J Psychiatry Neurosci*. 21(2):123-7.

Seeman MV. (1985) Sex and schizophrenia. *Can J Psychiatry*. 30(5):313-5.

Seeman, M.V. (1982) Gender differences in schizophrenia. *Can J Psychiatry*. 27(2):107-12.

Seeman M V(1983): Interaction of sex, age and antipsychotic dose. *Comp. Psychiatry* 24: 125-128.

Seeman M V (1986): Current outcome in schizophrenia women vs men. *Acta Psychiatr. Scand* 73: 609-617.

Seeman, T.E, McEwen, B.S, Singer. B.H, Albert, M.S, Rowe, J.W. (1997) Increase in urinary cortisol excretion and memory declines: MacArthur studies of successful aging. *J Clin Endocrinol Metab.* 82(8):2458-65.

Seeman, T.E, Singer, B, Wilkinson, C.W, McEwen, B. (2001) Gender differences in age-related changes in HPA axis reactivity. *Psychoneuroendocrinology*, 26(3):225-40.

Seidlitz, L & Diener, E. (1998) Sex differences in the recall of affective experiences. *Journal of Personality and Social Psychology*, 74, 262 – 271.

Seidman, L.J., Goldstein, J.M., Goodman, J.M., Koren, D., Turner, W.M., Faraone, S.V., Tsuang, M.T. (1997) Sex differences in olfactory identification and Wisconsin Card Sorting performance in schizophrenia: relationship to attention and verbal ability. *Biol Psychiatry.* 42(2):104-15.

Seidman, L.J., Buka, S.L., Goldstein, J.M., Horton, N.J., Rieder, R.O., Tsuang, M.T. (2000) The relationship of prenatal and perinatal complications to cognitive functioning at age 7 in the New England Cohorts of the National Collaborative Perinatal Project. *Schizophr Bull.* 26(2):309-21.

Servan-Schreiber, D., Cohen, J.D., Steingard, S. (1996) Schizophrenic deficits in the processing of context. A test of a theoretical model. *Arch Gen Psychiatry*, 53(12):1105-12.

Sharma, T. (2002) Impact on cognition of the use of antipsychotics. *Curr Med Res Opin.* 18 Suppl 3:s13-7.

Sharps, M.J., Welton, A.L. & Price, J.L. (1993) Gender and task in the determination of spatial cognitive performance. *Psychology of Women Quarterly*, 17, 71 - 83.

Sharps, M.J., Price, J.L., Williams, J.K. (1994) spatial cognition and gender, instructional and stimulus influences on mental image rotation performance. *Psychology of Women Quarterly*, 18, 413-425

Shaywitz, B.A., Shaywitz, S.E., Pugh, K.R., Constable, R.T., Skudlarski, P., Fulbright, R.K., Bronen, R.A., Fletcher, J.M., Shankweller, D.P., Katz, L. & Gore, J.C. (1995) Sex differences in the functional organisation of the brain for language. *Nature*, 373, 607-609.

Shaywitz SE, Shaywitz BA, Pugh KR, Fulbright RK, Skudlarski P, Mencl WE, Constable RT, Naftolin F, Palter SF, Marchione KE, Katz L, Shankweiler DP,

Fletcher JM, Lacadie C, Keltz M, Gore JC. (1999) Effect of estrogen on brain activation patterns in postmenopausal women during working memory tasks. *JAMA*, 281, 1197 – 1202.

Shenton, M.E., Kikinis, R., Jolesz, F.A., Pollak, S.D., LeMay, M., Wible, C.G., Hokama, H., Martin, J., Metcalf, D., Coleman, M., et al. (1992) Abnormalities of the left temporal lobe and thought disorder in schizophrenia. A quantitative magnetic resonance imaging study. *N Engl J Med*. 327(9):604-12.

Shepard, R.N. & Metzler, J. (1982) *Mental images and their transformations*. Cambridge, MA: MIT Press.

Shepard, R.N. & Metzler, J. (1971) Mental rotation of three-dimensional objects. *Science*, 171, 701-703.

Shepherd, J.E. (2001) Effects of estrogen on cognition mood, and degenerative brain diseases. *J Am Pharm Assoc (Wash)*. 41(2):221-8.

Sherry, D.F. & Hampson, E. (1997) Evolution and the hormonal control of sexually dimorphic spatial abilities in humans. *Trends in Cognitive Sciences*, 1, 50 – 56.

Sherwin, B.B. (1998). Estrogen and/or androgen replacement therapy and cognitive functioning in surgically menopausal women. *Psychoneuroendocrinology*, 13, 345-357.

Sherwin, B.B. (1999) Can estrogen keep you smart? Evidence from clinical studies. *Journal of Psychiatry and Neuroscience*, 24, 315 – 321.

Sherwin, B.B. (2002) Estrogen and cognitive aging in women. *Trends Pharmacol Science* 23(11):527-34.

Sherwin, B.B. (2002) Estrogen and cognitive functioning in men with mild cognitive impairment. *J Mol Neurosci*. 19(1-2):219-23.

Sherwin, B.B. (1994) Estrogenic effects on memory in women. *Ann N Y Acad Sci*. 43:213-30; discussion 230-1.

Sherwin, B.B., & Tulandi, T. (1996). 'Add-Back' estrogen reverses cognitive deficits induced by a gonadotropin-releasing hormone agonist in women with leiomyomata uteri. *Journal of Clinical Endocrinology and Metabolism*, 81, 2545-2549.

Sholl, M.J. (1989) The relation between horizontality and rod-and-frame and vestibular navigational performance. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 15, 110 – 125.

Shughrue PJ, Merchenthaler I. (2000) Evidence for novel estrogen binding sites in the rat hippocampus. *Neuroscience*. 99(4):605-12.

Shughrue PJ, Scrimo PJ, Merchenthaler I. (2000) Estrogen binding and estrogen receptor characterization (ERalpha and ERbeta) in the cholinergic neurons of the rat basal forebrain. *Neuroscience*. 96(1):41-9.

Shute, V.J., Pellegrino, J.W., Hubert, L. & Reynolds, R.W. (1983) The relationship between androgen levels and human spatial abilities. *Bulletin of the Psychonomic Society*, 21, 89 – 95.

Sih, R., Morley, J.E., Kaiser, F.E., et al. (1997). Testosterone replacement in older hypogonadal men: a 12 month randomised controlled trial. *Journal of Clinical Endocrinology Metabolism*, 82,1661-1667.

Silverman, I., Choi, J., Mackewn, A., Fisher, M., Moro, J. & Olshansky, E. (2000) Evolved mechanisms underlying wayfinding: Further studies on the hunter-gatherer theory of spatial sex differences. *Evolution and Human Behaviour*, 21, 201 – 213.

Silverman, I. & Eals, M. (1992) Sex differences in spatial abilities: Evolutionary theory and data. In Barkow, J.H., Cosmides, L. & Tooby, J. (Eds.) *The Adapted Mind: Evolutionary psychology and the generation of culture*. (New York: Oxford).

Silverman, I., Phillips, K. (1993) Effects of estrogen changes during the menstrual cycle on spatial performance *Ethology and Sociobiology*, 14: 257-270.

Silverman, I., Kastuk, D., Choi, J. & Phillips, K. (1999) Testosterone levels and spatial ability in men. *Psychoneuroendocrinology*, 24, 813 – 822.

Silverman, I., Phillips, K. & Silverman, L.K. (1996) Homogeneity of effect sizes for sex across spatial tests and cultures: Implications for hormonal theories. *Brain and Cognition*, 31, 90-94.

Simoni, M., Montanini, V., Fustini, M.F., Del Rio, G., Cioni, K., & Marrama, P. (1992). Circadian rhythm of plasma testosterone in men with idiopathic hypogonadotrophic hypogonadism before and during pulsatile administration of gonadotrophin-releasing hormone. *Clinical Endocrinology*, 36, 29-34.

Slabbekoorn, D., Van Goozen, S.H.M., Megens, J., Gooren, L.T.G. & Cohen-Kettenis, P.T. (1999) Activating effects of cross-sex hormones on cognitive functioning: A study of short-term and long-term hormone effect in transsexuals. *Psychoneuroendocrinology*, 24, 423-447.

Small GW. (1998) Estrogen effects on the brain. *J Gend Specif Med*. 1(2):23-7.

Smith, A. (1967) Consistent sex differences in a specific (decoding) test performance. *Educational and Psychological Measurement*, 27, 1077 – 1083.

Smith, E.E, Jonides, J., Koeppe, R.A. (1996) Dissociating verbal and spatial working memory using PET. *Cereb Cortex*. 6(1):11-20.

Smith, L.L. & Hines, M. (2000) Language lateralization and handedness in women prenatally exposed to diethylstilbestrol (DES). *Psychoneuroendocrinology*, 25, 497 – 513.

Smith, C.A., McCleary, C.A., Murdock, G.A., Wilshire, T.W., Buckwalter, D.K., Bretsky, P., Marmol, L., Gorsuch, R.L. & Buckwalter, J.G. (1999) Lifelong estrogen exposure and cognitive performance in elderly women. *Brain and Cognition*, 39, 203 – 218.

Smith YR, Giordani B, Lajiness-O'Neill R, Zubieta JK. (2001) Long-term estrogen replacement is associated with improved nonverbal memory and attentional measures in postmenopausal women. *Fertil Steril*. 76(6):1101-7.

Smith, M.L. & Milner, B. (1981) The role of the right hippocampus in the recall of spatial location. *Neuropsychologia*, 19, 781 - 793.

Smith M.L. & Milner, B. (1989) Right hippocampal impairment in the recall of spatial location: encoding deficit or rapid forgetting? *Neuropsychologia*, 27, 71 – 81.

Smith MJ, Schmidt PJ, Rubinow DR. (2000) Cognitive effects of testosterone supplementation. *Am J Psychiatry*. 157(2):307-8.

Smith, E.E, Jonides, J. (1998) Neuroimaging analyses of human working memory. *Proc Natl Acad Sci U S A*. 95(20):12061-8.

Smith, E.E, Jonides, J. (1997) Working memory: a view from neuroimaging. *Cognit Psychol*. 33(1):5-42.

Smith, E.E., Jonides, J., Marshuetz, C., Koeppel, R.A. (1998) Components of verbal working memory: evidence from neuroimaging. *Proc Natl Acad Sci U S A*. 95(3):876-82.

Smith S, Wheeler MJ, Murray R, O'Keane V. (2002) The effects of antipsychotic-induced hyperprolactinaemia on the hypothalamic-pituitary-gonadal axis. *J Clin Psychopharmacol*. 22(2):109-14.

Snow, W.G. & Weinstock, J. (1990) Sex differences in non-brain-damaged adults on the Wechsler Adult Intelligence Scales: a review of the literature. *Journal of Clinical and Experimental Neuropsychology*, 12, 873 – 886.

- Soderpalm, A.H., Lindsey, S., Purdy, R.H., Hauger, R., Wit de H. (2004) Administration of progesterone produces mild sedative-like effects in men and women. *Psychoneuroendocrinology*. 29, 339-54.
- Sommer, I, Ramsey, N, Kahn, R, Aleman, A, Bouma, A. (2001) Handedness, language lateralisation and anatomical asymmetry in schizophrenia: meta-analysis. *Br J Psychiatry*. 178:344-51.
- Sommer, I.E., Ramsey, N.F., Kahn, R.S. (2001) Language lateralization in schizophrenia, an fMRI study. *Schizophr Res*. 52(1-2):57-67.
- Southam, A.L., Gonzaga, F.P. (1965) Systemic changes during the menstrual cycle. *Am J Obstet Gynecol*. 91:142-65.
- Speck, O, Ernst, T, Braun, J, Koch, C, Miller, E, Chang, L. (2000) Gender differences in the functional organization of the brain for working memory. *Neuroreport*. 11(11):2581-5.
- Speroff L, Vande Wiele RL. (1971) Regulation of the human menstrual cycle. *Am J Obstet Gynecol*, 109, 234-47.
- Spitzer R L, Williams J B, Gibbon M (1990) Structured Clinical Interview for DSM-III-R, Patient Edition. Washington DC; American Psychiatric Press.
- Spitzer, R.L., Endicott, J., Robins, E. (1978) Research diagnostic criteria: rationale and reliability. *Arch Gen Psychiatry*. 35, 773-82.
- Squire, L.R (1987-88) organization and neural substrates of human memory. *Int J Neurol*. 21-22:218-22.

Squire, L.R. (1992) Memory and the hippocampus: a synthesis from findings with rats, monkeys, and humans. *Psychol Rev.* 99(2):195-231.

Stadler, M.A., Geary, D.C, Hogan, M.E. (2001) Negative priming from activation of counting and addition knowledge. *Psychol Res.* 65(1):24-7.

Stahl SM. (2001) Effects of estrogen on the central nervous system. *J Clin Psychiatry.* 62(5):317-8.

Stanislaw, H. & Todorov, N. (1999) Calculation of signal detection theory measures. *Behaviour Research Methods, Instruments and Computers*, 31, 137 – 149.

Starkman MN, Gebarski SS, Berent S, Schteingart DE. (1992) Hippocampal formation volume, memory dysfunction, and cortisol levels in patients with Cushing's syndrome. *Biol Psychiatry.* 1;32(9):756-65.

Steel, C., Hanworth, E.J., Peters, E., Hemsley, D.R., Sharma, T., Gray, J.A., Pickering, A., Gregory, L., Simmons, A., Bullmore, E.T., & S.C.R. Williams (2001) Neuroimaging correlates of negative priming. *Brain Imaging*, 12, 3619 – 3624.

Steinmetz, H., Staiger, J.F., Schlaug, G., Huang, Y., Jancke, L. (1995) Corpus callosum and brain volume in women and men. *Neuroreport.* 6(7):1002-4.

Steinmetz, H., Staiger, J.F., Schlaug, S.G., Huang, Y., Jancke, L. (1996) Inverse relationship between brain size and callosal connectivity. *Naturwissenschaften*, 83(5):221.

Stevens J.R. (2002) Schizophrenia: reproductive hormones and the brain. *Am J Psychiatry*, 159(5):713-9.

Stroop J R (1935). Studies of interference in series verbal reactions. *Journal of Experimental Psychology* 18: 643-662.

Stumpf, H. (1993) Performance factors and gender-related differences in spatial ability: another assessment. *Memory and Cognition*, 21, 828 – 836.

Sullivan, E.V., Shear, P.K., Zipursky, R.B., Sagar, H.J., Pfefferbaum, A. (1997) Patterns of content, contextual, and working memory impairments in schizophrenia and nonamnesic alcoholism. *Neuropsychology*, 11(2):195-206.

Sumerall, S.W., Tommons, P.L., James, A.L., Ewing, M.J. & Oehlert, M.E. (1997) Expanded norms for the Contolled Oral Word Association Test. *Journal of Clinical Psychology*, 53, 517 – 521.

Summer B E, Fink G (1997) The density of 5-hydroxytryptamine_{2A} receptors in forebrain is increased at pro-estrus in intact female rats. *Neuroscience Letters* 234: 7-10.

Summer BE, Fink G (1998) Testosterone as well as estrogen increases serotonin_{2A} receptor mRNA and binding site densities in the male rat brain. *Mol. Brain Res* 59 2 : 205-214.

Suzuki, W.A. & Amaral, D.G. (1994) Perirhinal and parahippocampal cortices of the macaque monkey: cortical afferents. *Journal of Comparative Neurology*, 350, 497 – 533.

Swaab, D.F, Chung, W.C, Kruijver, F.P, Hofman, M.A, Hestiantoro, A. (2003) Sex differences in the hypothalamus in the different stages of human life. *Neurobiol Aging*. 24 Suppl 1:S1-S16.

Sweeney, J.A., Keilp, J.G., Haas, G.L., Hill, J., Weiden, P.J. (1997) Relationships between medication treatments and neuropsychological test performance in schizophrenia. *Psychiatry Res*. 37(3):297-308.

Swerdlow, N.R., Hartman, P.L., Auerbach, P.P. (1997) Changes in sensorimotor inhibition across the menstrual cycle: implications for neuropsychiatric disorders. *Biol Psychiatry*. 41:452-60.

Swerdlow, N.R., Geyer, M.A., Hartman, P.L., Sprock, J., Auerbach, P.P., Cadenhead, K., Perry, W., Braff, D.L. (1999) Sex differences in sensorimotor gating of the human startle reflex: all smoke? *Psychopharmacology (Berl)*.146:228-32.

Swerdlow, N.R., Fillion, D., Geyer, M.A., Braff, D.L. (1995) "Normal" personality correlates of sensorimotor, cognitive, and visuospatial gating. *Biol Psychiatry*, 37:286-99.

Swerdlow, N.R., Auerbach, P., Monroe, S.M., Hartston, H., Geyer, M.A., Braff, D.L. (1993) Men are more inhibited than women by weak prepulses. *Biol Psychiatry*, 34:253-60.

Szeszko PR, Strous RD, Goldman RS, Ashtari M, Knuth KH, Lieberman JA, Bilder RM. (2002) Neuropsychological correlates of hippocampal volumes in patients experiencing a first episode of schizophrenia. *Am J Psychiatry*, 159(2):217-26.

Szymanski, S., Lieberman, J.A., Alvir, J.M., Mayerhoff, D., Loebel, A., Geisler, S., Chakos, M., Koren, A., Jody, D., Kane, J., et al. (1995) Gender differences in onset of illness, treatment response, course, and biologic indexes in first-episode schizophrenic patients. *Am J Psychiatry*, 152(5):698-703.

Tabachnick, B.G. & Fidell, L.S. (1996) *Using Multivariate Statistics* (New York: HarperCollins College Publishers)

Tagaris, G.A., Kim, S.G., Strupp, J.P., Andersen, P., Ugurbil, K. & Georgopoulos, A.P. (1997) Mental rotation studied by functional magnetic resonance imaging at high field (4 Tesla): Performance and cortical activation. *Journal of Cognitive Neuroscience*, 9, 419-432.

Tagaris, G.A., Kim, S.G., Strupp, J.P., Andersen, P., Ugurbil, K. & Georgopoulos, A.P. (1996) Quantitative relations between parietal activation and performance in mental rotation. *NeuroReport*, 29, 773-776.

Talairach, J., Tournoux, P. (1988) *Co-planar stereotaxic atlas of the human brain*. Thieme, New York.

Tallal, P. (1991) Hormonal influences in developmental learning disabilities. *Psychoneuroendocrinology*, 16(1-3):203-11.

Tan, R.S. (2002) Andropause and testosterone supplementation for cognitive loss. *Journal of Andrology*, 23(1):45-6.

Tandon R, Mazzara C, DeQuardo J, Craig K A, Meador-Woodruff J H, Goldman R (1991) Dexamethasone suppression test in schizophrenia: Relationship to symptomatology, ventricular enlargement, and outcome. *Biol. Psychiatr.* 29:953-964.

Taylor, S.F., Kornblum, S., Minoshima, S., Oliver, L.M., Koeppe, R.A. (1994) Changes in medial cortical blood flow with a stimulus-response compatibility task. *Neuropsychologia*, 32(2):249-55.

Terasawa, E, Timiras, P.S. (1968) Electrophysiological study of the limbic system in the rat at onset of puberty. *Am J Physiol*. 215(6):1462-7.

Thal, L.J, Thomas, R.G, Mulnard, R, Sano, M, Grundman, M, Schneider, L. (2003) Estrogen levels do not correlate with improvement in cognition. *Arch Neurol*. 60(2):209-12.

Their, P. & Andersen, R.A. (1996) Electrical micostimulation suggest two different representations of head-centred space in the intraparietal sulcus of rhesus monkeys. *Proceedings of the National Academy of Sciences, USA*, 93, 4962 – 4967.

Thomas, K.M., King, S.W., Franzen, P.L, Welsh, T.F., Berkowitz, A.L., Noll, D.C., Birmaher, V., Casey, B.J. (1999) A developmental functional MRI study of spatial working memory. *Neuroimage*. 10(3 Pt 1):327-38.

Thomsen, T., Hugdahl, K., Ersland, L., Barndon, R., Lundervold, A., Smievoll, A.I., Roscher, B.E. & Sundberg, H. (2000) Functional magnetic resonance imaging (fMRI) study of sex differences in a mental rotation task. *Medical Science Monitor*, 6, 1186 – 1196.

Tiihonen, J., Katila, H., Pekkonen, E., Jaaskelainen, I.P., Huotilainen, M., Aronen, H.J., Ilmoniemi, R.J., Rasanen, P., Virtanen, J, Salli, E., Karhu, J. (1998) Reversal of cerebral asymmetry in schizophrenia measured with magnetoencephalography.

Schizophr Res. 10;30(3):209-19.

Tivis, LJ, Nixon SJ, Green MD. Estrogen replacement therapy: a perspective on cognitive impact. *Assessment*, 8(4):403-16.

Thompson K, Sergejew A, Kulkarni J (2000) Estrogen affects cognition in women with psychosis. *Psychiatry Research* 93: 201-209.

Thompson K, Sergejew A, Kulkarni J (2000) Estrogen affects cognition in women with psychosis. *Psychiatry Research* 93: 201-209.

Torres, I.J., Flashman, L.A., O'Leary, D.S., Swayze, V 2nd., Andreasen, N.C. (1997) Lack of an association between delayed memory and hippocampal and temporal lobe size in patients with schizophrenia and healthy controls. *Biol Psychiatry*, 42(12):1087-96.

Torrey, E.F., Taylor, E.H., Bracha, H.S., Bowler, A.E., McNeil, T.F., Rawlings, R.R., Quinn, P.O., Bigelow, L.B., Rickler, K., Sjostrom, K., et al. (1994) Prenatal origin of schizophrenia in a subgroup of discordant monozygotic twins. *Schizophr Bull.* 20(3):423-32.

Townsend, L.A, Malla, A.K, Norman, R.M. (2001) Cognitive functioning in stabilized first-episode psychosis patients. *Psychiatry Res.* 104(2):119-31.

Trenerry, M.R., Jack, C.R., Cascino, G.D., Sharbrough, F.W. & Ivnik, R.J. (1995) Gender differences in post-lobectomy verbal memory and relationships between MRI hippocampal volumes and preoperative verbal memory. *Epilepsy Research*, 20, 69 – 76.

Trenerry, M.R., Jack, C.R., Ivnick, R.J., Sharbrough, F.W., Cascino, G.D., Hirschorn, K.A., Marsh, W.R., Kelly, P.J. & Meyer, F.B. (1993) MRI hippocampal

volumes and memory function before and after temporal lobectomy. *Neurology*, 43, 1800 – 1805.

Trivers, R.L., Manning, J.T., Thornhill, R. & Singh, D. (1999) The Jamaican asymmetry project: a long-term study of fluctuating asymmetry in rural Jamaican children. *Human Biology*, 71, 417 – 430.

Troyer, A.K., Moscovitch, M. & Winocur, G. (1997) Clustering and switching as two components of verbal fluency: evidence from younger and older healthy adults. *Neuropsychology*, 11, 138 – 146.

Tulving, E., Kapur, S., Craik, F.I, Moscovitch, M., Houle, S. (1994) Hemispheric encoding/retrieval asymmetry in episodic memory: positron emission tomography findings *Proc Natl Acad Sci U S A*. 91(6):2016-20.

Turner, S.W., Toone, B.K., Brett-Jones, J.R. (1986) Computerized tomographic scan changes in early schizophrenia--preliminary findings. *Psychol Med*. 16(1):219-25.

Suddath, R.L., Christison, G.W., Torrey, E.F., Casanova, M.F., Weinberger, D.R. (1990) Anatomical abnormalities in the brains of monozygotic twins discordant for schizophrenia. *N Engl J Med*. 322(12):789-94.

Ungerleider, L.G., Courtney, S.M., Haxby, J.V. (1998) A neural system for human visual working memory. *Proc Natl Acad Sci U S A*. 95(3):883-90.

Unterrainer, J., Wranek, U., Staffen, W., Gruber, T., Ladurner, G. (2000) Lateralized cognitive visuospatial processing: is it primarily gender-related or due to quality of performance? A HMPAO-SPECT study *Neuropsychobiology*. 41:95-101.

van Amelsvoort, T., Compton, J., Murphy, D. (2001) In vivo assessment of the effects of estrogen on human brain. *Trends Endocrinol Metab.* 12(6):273-6.

van Amelsvoort, T.A., Abel, K.M., Robertson, D.M., Daly, E., Critchley, H., Whitehead, M., Murphy, D.G. (2001) Prolactin response to d-fenfluramine in postmenopausal women on and off ERT: comparison with young women. *Psychoneuroendocrinology.* 26(5):493-502.

Vandenberg, S.G., Kuse, A.R. & Vogler, G.P. (1985) Searching for correlates of spatial ability. *Perceptual and Motor Skills*, 60, 343-350.

Vandenberg, S.G. & Kuse, A.R. (1978) Mental rotations: A group test of three-dimensional spatial visualization. *Perceptual and Motor Skills*, 47, 599-604.

Van Cauter, E., Linkowski, P., Kerkhofs, M., Hubain, P., L'Hermite-Baleriaux, M., Leclercq, R., Brasseur, M., Copinschi, G., Mendlewicz, J. (1991) Circadian and sleep-related endocrine rhythms in schizophrenia. *Arch Gen Psychiatry*, 48(4):348-56.

Van Der werf, Y.D., Tisserand, D.J., Visser, P.J., Hofman, P.A., Vuurman, E., Uylings, H.B. & Joles, J. (2001) Thalamic volume predicts performance on tests of cognitive speed and decreases in healthy ageing: a magnetic resonance imaging-based volumetric analysis. *Cognitive Brain Research*, 11, 377 – 385.

Van Goozen, S.H.M., Cohen-Kettenis, P.T., Gooren, L.T.G., Frijda, N.H. & Van de Poll, N.E. (1995) Gender differences in behaviour: Activating effects of cross-sex hormones. *Psychoneuroendocrinology*, 20, 343-363

Van Goozen, S.H.M., Cohen-Kettenis, P.T., Gooren, L.T.G., Frijda, N.H. & Van de Poll, N.E. (1994) Activating effects of androgens on cognitive performance: Causal

evidence in a group of female-to-male transsexuals. *Neuropsychologia*, 32, 1153-1157.

Van Honk, J., Tuiten, A., Verbaten, R., Van den Hout, M., Koppeschaar, H., Thijssen, J. & De Haan, E. (1999) Correlations among salivary testosterone, mood, and selective attention to threat in humans. *Psychoneuroendocrinology*, 36, 17 – 24.

van Niekerk, J.K, Huppert, F.A, Herbert, J. (2001) Salivary cortisol and DHEA: association with measures of cognition and well-being in normal older men, and effects of three months of DHEA supplementation. *Psychoneuroendocrinology*, 26(6):591-612.

Van Strien, J.W. & Heijt, R. (1995) Altered visual field asymmetries for letter naming and letter matching as a results of concurrent presentation of threatening and non-threatening words. *Brain & Cognition*, 29, 187 – 203.

Van Strien, J.W. & Morpurgo, M. (1992) Opposite hemispheric activations as a results of emotionally threatening and non-threatening words. *Neuropsychologia*, 30, 845 – 848.

Vazquez-Barquero, J.L., Cuesta Nunez, M.J., Quintana Pando, F., de la Varga, M., Herrera Castanedo, S., Dunn, G. (1995) Structural abnormalities of the brain in schizophrenia: sex differences in the Cantabria First Episode of Schizophrenia Study. *Psychol Med*. 25(6):1247-57.

Veldhuis, J.D., Evans, W.S., Stumpf, P.G. (1989) Mechanisms that subserve estradiol's induction of increased prolactin concentrations: evidence of amplitude modulation of spontaneous prolactin secretory bursts. *Am J Obstet Gynecol*. 161(5):1149-58.

Veltman, D.J., Friston, K.J., Sanders, G., Price, C.J. (2000) Regionally specific sensitivity differences in fMRI and PET: where do they come from? *Neuroimage*, 11(6 Pt 1):575-88.

Vendrell, P., Junque, C., Pujol, J., Jurado, M.A., Molet, J., Grafman, J. (1995) The role of prefrontal regions in the stroop task. *Neuropsychologia*, 33, 341 –352.

Verdoux, H., Geddes, J.R., Takei, N., Lawrie, S.M., Bovet, P., Eagles, J.M., Heun, R., McCreadie, R.G., McNeil, T.F., O'Callaghan, E., Stober, G., Willinger, M.U., Wright, P., Murray, R.M. (1997) Obstetric complications and age at onset in schizophrenia: an international collaborative meta-analysis of individual patient data *Am J Psychiatry*, 154, 1220-1227

Vergheze, J., Kuslansky, G., Katz, M.J., Sliwinski, M., Crystal, H.A., Buschke, H., Lipton, R.B. (2000) Cognitive performance in surgically menopausal women on estrogen. *Neurology* 55(6):872-4.

Vermeulen, A., Verdonck, L., & Kaufman, J.M. (1999). A critical evaluation of simple methods for the estimation of free testosterone in serum. *The Journal. of Clinical Endocrinology and Metabolism*, 84, 3666-3672.

Villeneuve, A., Cazejust, T., Cote, M. (1980) Estrogens in tardive dyskinesia in male psychiatric patients. *Neuropsychobiology*, 6(3):145-51.

Vita, A., Sacchetti, E., Valvassori, G., Cazzullo, C.L. Brain morphology in schizophrenia: a 2- to 5-year CT scan follow-up study. *Acta Psychiatr Scand*. 78(5):618-21.

Vogel W, Broverman DM, Klaiber EL, Kobayashi Y. (1974) EEG driving responses as a function of monoamine oxidase. *Electroencephalogr Clin Neurophysiol.*, 36(2):205-7.

Vogeley, K., Hobson, T., Schneider-Axmann, T., Honer, W.G., Bogerts, B., Falkai, P. (1998) Compartmental volumetry of the superior temporal gyrus reveals sex differences in schizophrenia—a post-mortem study. *Schizophr Res.* 31(2-3):83-7.

Voyer, D. (1996) On the magnitude of laterality effects in sex differences in functional lateralities. *Laterality*, 1, 51 – 83.

Voyer, D. & Flight, J. (2001) Gender differences in laterality on a dichotic task: the influence of report strategies. *Cortex*, 37, 345 – 362.

Voyer, D., Voyer, S. & Bryden, M.P. (1995) Magnitude of sex differences in spatial abilities: A meta-analysis and consideration of critical variables. *Psychological Bulletin*, 117, 250-270.

Waber, D.P. (1976) Sex differences in cognition: a function of maturation rate? *Science*, 192, 572 – 573.

Walder D J, Walker E F, Lewine R J (2000): Cognitive functioning, cortisol release, and symptom severity in patients with schizophrenia. *Biological Psychiatry* 48: 1121-1132.

Walker, E.F., Diforio, D. (1997) Schizophrenia: a neural diathesis-stress model. *Psychol Rev.* 104(4):667-85.

Walker, E.F., Grimes, K.E., Davis, D.M., Smith, A.J. (1993) Childhood precursors of schizophrenia: facial expressions of emotion. *Am J Psychiatry*, 150(11):1654-60.

Warburton, E, Wise, R.J, Price, C.J, Weiller, C., Hadar, U., Ramsay, S., Frackowiak, R.S. (1996) Noun and verb retrieval by normal subjects. Studies with PET Brain 119 (Pt 1):159-79.

Ward, O.B., Ward, I.L., Denning, J.H., Hendricks, S.E. & French, J.A. (2002) Hormonal mechanisms underlying aberrant sexual differentiation in male rats prenatally exposed to alcohol, stress, or both. Archives of Sexual Behaviour, 31, 9 – 16.

Warner, M.D., Walker, A.M., D'Souza, D.C., Lee, D., Nasser, D., Peabody, C.A. (2001) Lower prolactin bioactivity in unmedicated schizophrenic patients. Psychiatry Res. 102(3):249-54.

Watkins, M.P. & Meredith, W. (1981) Spouse similarity in newlyweds with respect to specific cognitive abilities, socio-economic status and education. Behaviour Genetics, 11, 1 – 21.

Watkins, K.E., Gadian, D.G., Vargha-Khadem, F. (1999) Functional and structural brain abnormalities associated with a genetic disorder of speech and language Am J Hum Genet. 65:1215-21.

Watson, N.V. & Kimura, D. (1991) Non-trivial sex differences in throwing and intercepting: Relation to psychometrically defined spatial functions. Personality & Individual Differences, 12, 375 – 385.

Wechsler, D. (1958) The measurement and appraisal of adult intelligence (4th Ed). (Baltimore: Williams and Wilkins).

Weissman, M.M., Warner, V., Wickramaratne, P., Prusoff, B.A. (1988) Early-onset major depression in parents and their children. J Affect Disord. 15(3): 269-77.

Weschler D. (1981). WAIS-R. Psychological Corporation, New York.

Weekes, N.Y., Zaidel, D.W. & Zaidel, E. (1995) Effects of sex and sex role attributions on the ear advantage in dichotic listening. *Neuropsychology*, 9, 62-67.

Weinberger, D.R., Berman, K.F. (1996) Prefrontal function in schizophrenia: confounds and controversies. *Philos Trans R Soc Lond B Biol Sci*. 351(1346):1495-503.

Weinberger, D.R., Mattay, V., Callicott, J., Kotrla, K., Santha, A., van Gelderen, P., Duyn, J., Moonen, C., Frank, J. (1996) fMRI applications in schizophrenia research. *Neuroimage*, 4(3 Pt 3):S118-26.

Weinberger, D.R., Berman, K.F., Suddath, R., Torrey, E.F. (1992) Evidence of dysfunction of a prefrontal-limbic network in schizophrenia: a magnetic resonance imaging and regional cerebral blood flow study of discordant monozygotic twins. *Am J Psychiatry*, 149(7):890-7.

Weinberger, D.R., Luchins, D.J., Morihisa, J., Wyatt, R.J. (1982) Asymmetrical volumes of the right and left frontal and occipital regions of the human brain. *Ann Neurol*. 11(1):97-100.

Weiser, M., Reichenberg, A., Rabinowitz, J., Kaplan, Z., Mark, M., Nahon, D., Davidson, M. (2000) Gender differences in premorbid cognitive performance in a national cohort of schizophrenic patients. *Schizophr Res*. 45(3):185-90.

Wetzel C H R, Hermann B, Behl C, Pestel E, Rammes G, Zieglgansberger W, Holsboer F, Rupprecht R (1998): Functional antagonistic properties of gonadal steroids at the 5-HT₃ receptor. *Molecular Endocrinology* 12: 1441-1451.

Whalen JP. (1968) Radiographic anatomy. *N Y State J Med*. 68, 23, 3019-30.

Whalen, P.J., Bush, G., McNally, R.J., Wilhelm, S., McInerney, S.C., Jenike, M.A., Rauch, S.L. (1998) The emotional counting Stroop paradigm: a functional magnetic resonance imaging probe of the anterior cingulate affective division. *Biol Psychiatry*, 44(12):1219-28.

Whalley, L. J, Christie J.E., Blackwood, D.H., Bennie, J., Dick, H., Blackburn, I.M., Fink, G. (1989) Disturbed endocrine function in the psychoses. II: Discriminant function analysis of multihormone data. *Br J Psychiatry*, 155:462-7.

Wheeler, M., & Nanjee. (1985). A steady-state gel filtration method on micro-columns for the measurement of percentage free testosterone in serum. *Annual Clinical Biochemistry*, 22, 185-189.

Weickert, T.W., Goldberg, T.E., Gold, J.M., Bigelow, L.B., Egan, M.F., Weinberger, D.R. (2000) Cognitive impairments in patients with schizophrenia displaying preserved and compromised intellect. *Arch Gen Psychiatry* 57(9):907-13.

Wendt, P.E., Risberg, J. (1994) Cortical activation during visual spatial processing: relation between hemispheric asymmetry of blood flow and performance. *Brain Cogn.* 24(1):87-103.

Wexler, B.E., Giller, E.L., Jr, Southwick, S. (1991) Cerebral laterality, symptoms, and diagnosis in psychotic patients. *Biol Psychiatry*, 29(2):103-16.

Wigal, S.B., Swanson, J.M., Potkin, S.G. (1997) Lateralized attentional deficits in drug-free and medicated schizophrenic patients. *Neuropsychologia*, 35(12):1519-25.

- Wik, G. (1995) Effects of neuroleptic treatment on cortisol and 3-methoxy-4-hydroxyphenylethyl glycol levels in blood. *J Endocrinol.* 144(3):425-9.
- Williams CL, Meck WH. (1991) The organizational effects of gonadal steroids on sexually dimorphic spatial ability. *Psychoneuroendocrinology*, 16, 155-176
- Williams, C.L., Barnett, A.M. & Meck, W.H. (1990) Organisational effects of early gonadal secretions on sexual differentiation in spatial memory. *Behavioural Neuroscience*, 53, 1021 - 1024.
- Wilson, E.O. (1975) *Sociobiology: the new synthesis*. Cambridge, MA: Belknap.
- Wilson, E.O. (1978) *On human nature*. Cambridge, MA: Harvard University Press.
- Wilson, J.R., DeFries, J.C., McClearn, G.E., Vandenberg, S.G., Johnson, R.C. & Rashad, M.N. (1975) Cognitive abilities: Use of family data as a control to assess sex and age differences in two ethnic groups. *International Journal of Ageing and Human Development*, 6, 261 – 276.
- Wise, R., Chollet, F., Hadar, U., Friston, K., Hoffner, E., Frackowiak, R. (1991) Distribution of cortical neural networks involved in word comprehension and word retrieval *Brain*. 114 (Pt 4):1803-17.
- Wisniewski, A.B., Migeon, C.J., Meyer-Bahlburg, H.F.L., Gearhart, J.P., Berkovitz, G.D., Brown, T.R. & Money, J. (2000) Complete androgen insensitivity syndrome: Long term medical, surgical and psychosexual outcome. *Journal of Clinical Endocrinology & Metabolism*, 85, 2664 – 2669.
- Wisniewski, A.B, Nguyen, T.T, Dobs, A.S. (2002) Evaluation of high-dose estrogen and high-dose estrogen plus methyltestosterone treatment on cognitive

task performance in postmenopausal women. *Horm Res.* 58(3):150-5.

Wisniewski, A.B., & Nelson, R.J. (2000). Seasonal variation in human functional cerebral lateralization and free testosterone concentrations. *Brain and Cognition*, 43, 429-438.

Witelson, S.F. (1989) Hand and sex differences in the isthmus and genu of the human corpus callosum. *Brain*, 112, 799 – 835.

Witelson, S.F. (1991) Neural sexual mosaicism: Sexual differentiation of the human temporal-parietal region for functional asymmetry. *Psychoneuroendocrinology*, 16, 131-153.

Witelson, S.F., Glezer, I.I. & Kigar, D.L. (1995) Women have greater density of neurons in posterior temporal cortex. *Journal of Neuroscience*, 15, 3418 – 3428.

Witelson, S.F. & Goldsmith, C.H. (1991) The relationship of hand preference to anatomy of the corpus callosum in men. *Brain Research*, 545, 175 – 182.

Kirschbaum, C., Wolf, O.T., May, M., Wippich, W., Hellhammer, D.H. (1996) Stress- and treatment-induced elevations of cortisol levels associated with impaired declarative memory in healthy adults. *Life Sci.* 58(17):1475-83.

Wolf, OT. Preut, R., Hellhammer, D.H., Kudielka, B.M., Schurmeyer, T.H. & Kirschbaum, C. (2000) Testosterone and cognition in elderly men: a single testosterone injection blocks the practice effect in verbal fluency, but has no effect on spatial or verbal memory. *Biological Psychiatry*, 47, 650 – 654.

Wolf, OT. Kudielka, B.M. Hellhammer, D.H. Torber, S. McEwen, B.S. & Kirschbaum, C. (1999) Two weeks of estradiol treatment in postmenopausal elderly women and its effect on memory and mood: verbal memory changes are associated

with the treatment induced estradiol levels. *Psychoneuroendocrinology*, 24, 727-741.

Wolf OT, Kirschbaum C. (2002) Endogenous estradiol and testosterone levels are associated with cognitive performance in older women and men. *Horm Behav*, 41(3):259-66

Wolf, O.T., Schommer, N.C., Hellhammer, D.H., McEwen, B.S. & Kirschbaum, C. (2001) The relationship between stress induced cortisol levels and memory differs between men and women. *Psychoneuroendocrinology*, 26, 711 – 720.

Wolkowitz, O.M. (1990) . Use of the dexamethasone suppression test with mentally retarded persons: review and recommendations. *Am J Ment Retard*. 94(5):509-14.

Wolkowitz, O.M, Reus, V.I, Weingartner, H, Thompson, K, Breier, A, Doran, A, Rubinow, D, Pickar, D. (1990). Cognitive effects of corticosteroids. *Am J Psychiatry*, 147(10):1297-303.

Woodard, J.L., Benedict, R.H., Salthouse, T.A., Toth, J.P., Zgaljardic, D.J. & Hancock, H.E. (1998) Normative data for equivalent, parallel forms of the judgement of line orientation test. *Journal of Clinical and Experimental Neuropsychology*, 20, 457 – 462.

Woodruff, P.W., Pearlson, G.D., Geer, M.J., Barta, P.E., Chilcoat, H.D. (1993) A computerized magnetic resonance imaging study of corpus callosum morphology in schizophrenia. *Psychol Med*, 23(1):45-56.

Woodson, J.C. & Gorski, R.A. (2000) Structural sex differences in the mammalian brain: reconsidering the male/female dichotomy. In Matsumoto, A. (Ed) *Sexual differentiation of the brain*. (Florida: CRC Press).

Woolley, C.S, Weiland, N.G, McEwen, B.S, Schwartzkroin, P.A. (1997) Estradiol increases the sensitivity of hippocampal CA1 pyramidal cells to NMDA receptor-mediated synaptic input: correlation with dendritic spine density. *J Neurosci.*, 17(5):1848-59.

Yaffe K, Lui LY, Grady D, Cauley J, Kramer J, Cummings SR.(2000). Cognitive decline in women in relation to non-protein-bound oestradiol concentrations. *Lancet*, 356(9231), 708-12.

Yaffe, K., Grady, D., Pressman, A. & Cummings, S. (1998) Serum estrogen levels, cognitive performance, and risk of cognitive decline in older community women. *Journal of the American Geriatric Society*, 46, 816 – 821.

Yaffe, K., Lui, L.Y., Zmuda, J. & Cauley, J. (2002) Sex hormones and cognitive function in older men. *Journal of the American Geriatric Society*, 50, 707 – 712.

Yassa, R., Jeste, D.V. (1992) Gender differences in tardive dyskinesia: a critical review of the literature. *Schizophr Bull.* 18(4):701-15.

Yeo, R.A. & Gangestad, S.W. (1993) Hand preference and developmental instability. *Psychobiology*, 21, 161 – 168.

Yetkin, F.Z., Hammeke, T.A., Swanson, S.J., Morris, G.L., Mueller, W.M., McAuliffe, T.L, Haughton, V.M. (1995) A comparison of functional MR activation patterns during silent and audible language tasks. *Am J Neuroradiol.* 16:1087-92.

Young A H, Sahakian B J, Robbins T W, Cowen P G (1999): The effects of chronic administration of hydrocortisone on cognitive function in normal male volunteers. *Pharmacology* 145:260-266.

Youssef H A (1991): Duration of neuroleptic treatment and relapse rate: a 5-year

follow-up study with haloperidol decanoate. *Clinical Neuropharmacology* 14 Suppl 2: S16-21.

Yurgelun-Todd, D.A., Wateraux, C.M., Cohen, B.M., Gruber, S.A., English, C.D., Renshaw, P.F. (1996) Functional magnetic resonance imaging of schizophrenic patients and comparison subjects during word production *Am J Psychiatry*.153:200-5.

Zhou, J.N., Hofman, M.A., Gooren, L.J.G. & Swaab, D.F. (1995a) A sex difference in the human brain and its relation to transsexuality. *Nature*, 378, 68-70.

Zitzmann, M. & Nieschlag, E. (2001) Testosterone levels in healthy men and the relation to behavioural and physical characteristics: facts and constructs. *European Journal of Endocrinology*, 144, 183 – 197.

Zitzmann M, Weckesser M, Schober O, Nieschlag E. (2001) Changes in cerebral glucose metabolism and visuospatial capability in hypogonadal males under testosterone substitution therapy. *Exp Clin Endocrinol Diabetes*, 109(5), 302-4.

Zitzmann, M. & Nieschlag, E. (2000) Hormone substitution in male hypogonadism *Mol Cell Endocrinol*. 161, 73-88.

Zysset, S. Muller, K, Lohmann, G, von Cramon, D. (2001). Color-Word Matching Stroop Task: Separating Interference and Response Conflict. *Neuroimage*, 13, 29-36.