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The study of behavioral dysfunctions

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Publications

Research papers in journals

- Blokland, A., Raaijmakers, W., Honig, W. & van der Staay, F.J. (1992). Spatial discrimination learning and orientation strategy in young and old Lewis rats. *Neuroscience Research Communications*, **10**(2), 105-110.
- idem in: Blokland, A. (1992). *Animal models of cognitive aging and dementia in the rat: problems and perspectives*. Doctoral dissertation, State University of Limburg, Maastricht, The Netherlands (ISBN 90-5278-033-1), pp. 35-41.
- Blokland, A., Raaijmakers, W., van der Staay, F.J. & Jolles, J. (1990). Differential effect of acetyl-L-carnitine on open field behavior in young and old rats. *Physiology & Behavior*, **47**, 783-785.
- Eijkenboom, M. & van der Staay, F.J. (1999). Spatial learning deficits in rats after injection of vincristine into the dorsal hippocampus. *Neuroscience*, **91**, 1299-1313.
- Eijkenboom, M., Gerlach, I. & van der Staay, F.J. (1999). The effects of subdural haematoma on spatial learning in the rat. *Neuroscience*, **94**, 373-388.
- Flagmeyer, I. & van der Staay, F.J. (1995). Linopirdine (DuP 996; AVIVA): its effects in the Morris water escape task and on retention of an incompletely acquired bar-press response in rodents. *Pharmacology Biochemistry and Behavior*, **51**, 111-117.
- Flagmeyer, I., Gebert, I. & van der Staay, F.J. (1995). General pharmacology of the putative cognition enhancer linopirdine. *Arzneimittelforschung/Drug Research*, **45**, 456-459.
- Hinz, V.C., Blokland, A., van der Staay, F.J., Gebert, I., Schuurman, T. & Schmidt, B.H. (1996). Receptor interaction profile and CNS general pharmacology of metrifonate and its transformation product dichlorvos in rodents. *Drug Development Research*, **38**, 31-42.
- Kerbusch, S., van der Staay, F.J. & Hendriks, N. (1981). A searching procedure for transformations and models in a classical Mendelian cross breeding study. *Behavior Genetics*, **11**, 239-254.
- Klapdor, K., Blokland, A., Horváth, E. & van der Staay, F.J. (1997). Bilateral subdural hematoma in the rats Effects on performance in a visual discrimination task. *Neuroscience Research Communications*, **20**(2), 79-84.
- Klapdor, K., Dulfer, B.G., Hammann, A. & van der Staay, F.J. (1997). A low-cost method to analyse footprint patterns. *Journal of Neuroscience Methods*, **75**, 49-54.
- Klapdor, K. & van der Staay, F.J. (1996). The Morris water escape task in mice: strain differences and effects of intra-maze contrast and brightness. *Physiology & Behavior*, **60**, 1247-1254.
- idem in: Klapdor-Dulfer, K. (1996). *On the assessment of functional deficits in rodent models of cerebrovascular disorders*. Doctoral dissertation, State University of Utrecht, Utrecht, The Netherlands (ISBN 90-393-1157-9), pp. 53-66.
- Klapdor, K. & van der Staay, F.J. (1998). Repeated acquisition of a spatial navigation task in mice: effects of spacing of trials and of unilateral middle cerebral artery occlusion. *Physiology and Behavior*, **63**(5), 903-909.
- idem in: Klapdor-Dulfer, K. (1996). *On the assessment of functional deficits in rodent models of cerebrovascular disorders*. Doctoral dissertation, State University of Utrecht, Utrecht, The Netherlands (ISBN 90-393-1157-9), pp. 67-78.
- Köppen, A., Klein, J., Schmidt, B.H., van der Staay, F.J. & Löffelholz, K. (1996). Effects of nicotinamide on central cholinergic transmission and on spatial learning in rats. *Pharmacology Biochemistry & Behavior*, **53**, 783-790.
- Raaijmakers, W., Blokland, A. & van der Staay, F.J. (1993). Spatial discrimination learning in rats as an animal model of cognitive ageing. *Behavioural Processes*, **30**, 165-174.
- Schmidt, B.H. & van der Staay, F.J. (1998). Mixed acetyl-butryl-cholinesterase inhibitors are as well tolerated as selective cholinesterase inhibitors: a systematic comparison in rats. *International Journal of Geriatric Psychopharmacology*, **1**, 134-139.
- van der Staay, F.J. (1997). Shift in performance of 24-month-old Wistar rats in the Morris water escape task: a comparison across thirty-six experiments. *Behavioural Brain Research*, **87**, 213-222.
- van der Staay, F.J. (1999). Spatial working and reference memory of Brown Norway and WAG rats in a holeboard discrimination task. *Neurobiology of Learning and Memory*, **71**(1), 113-125.

- van der Staay F.J., Antonicek, H., Helpap, B. & Freund, W.-D. (1995). Effects of the selective metabotropic glutamate receptor agonist L-CCG-I, on acquisition of a Morris task by rats. *European Journal of Pharmacology*, **294**, 361-365
- van der Staay, F.J., Augstein, K.-H. & Horváth, E. (1996). Sensorimotor impairments in Wistar Kyoto rats with cerebral infarction, induced by unilateral occlusion of the middle cerebral artery: recovery of function. *Brain Research*, **715**, 180-188.
- van der Staay, F.J., Augstein, K.-H. & Horváth, E. (1996). Sensorimotor impairments in rats with cerebral infarction, induced by unilateral occlusion of the left middle cerebral artery: strain differences and effects of the occlusion site. *Brain Research*, **735**, 271-284.
- van der Staay, F.J. & Blokland, A. (1996). Repeated assessment of spatial discrimination performance of aged rats in the Morris water escape task. *Neurobiology of Learning and Memory*, **65**, 99-102.
- van der Staay, F.J. & Blokland, A. (1996). Behavioral differences between outbred Wistar, inbred Fischer 344, Brown Norway, and hybrid Fischer 344*Brown Norway rats. *Physiology & Behavior*, **60**(1), 97-109.
- van der Staay, F.J., Blokland, A. & Raaijmakers, W. (1990). Different time course for age-related changes of behavior in a complex spatial cone-field discrimination task in Lewis rats. *Psychobiology*, **18**(3), 305-311.
- idem in: Blokland, A. (1992). *Animal models of cognitive aging and dementia in the rat: problems and perspectives*. Doctoral dissertation, State University of Limburg, Maastricht, The Netherlands (ISBN 90-5278-033-1), pp. 23-34.
- van der Staay, F.J. & de Jonge, M. (1993). Effects of age on water escape behavior and on repeated acquisition in rats. *Behavioral and Neural Biology*, **60**, 33-41.
- van der Staay, F.J., Hinz, V.C. & Schmidt, B. (1996). Effects of metrifonate on escape and avoidance learning in young and aged rats. *Behavioural Pharmacology*, **7**, 56-64.
- idem in: V.C. Hinz (1995). *Preclinical pharmacology of metrifonate: involvement of cholinesterase inhibition in cognition enhancing processes*. Doctoral dissertation, University of Utrecht, Utrecht, The Netherlands (ISBN 90-393-1501-9), pp. 45-55.
- van der Staay, F.J., Hinz, V.C. & Schmidt, B. (1996). Effects of metrifonate, its transformation product dichlorvos, and other organophosphorus and reference cholinesterase inhibitors on Morris water-escape behavior in young-adult rats. *The Journal of Pharmacology and Experimental Therapeutics*, **278**, 697-708.
- idem in: V.C. Hinz (1995). *Preclinical pharmacology of metrifonate: involvement of cholinesterase inhibition in cognition enhancing processes*. Doctoral dissertation, University of Utrecht, Utrecht, The Netherlands (ISBN 90-393-1501-9), pp. 57-78.
- van der Staay, F.J., Kerbusch, S. & Raaijmakers, W. (1990). Genetic correlations in validating emotionality. *Behavior Genetics*, **20**(1), 51-62.
- van der Staay, F.J., Krechting, B., Blokland, A. & Raaijmakers, W.G.M. (1990). The cone field: a spatial discrimination task for the automatic and simultaneous assessment of working and reference memory in rats. *Journal of Neuroscience Methods*, **31**, 13-22.
- idem in: Blokland, A. (1992). *Animal models of cognitive aging and dementia in the rat: problems and perspectives*. Doctoral dissertation, State University of Limburg, Maastricht, The Netherlands (ISBN 90-5278-033-1), pp. 11-22.
- van der Staay, F.J., Raaijmakers, W., Collijn, D. & Kerbusch, S. (1992). Chronic dietary choline enrichment affects DRL responding of old, but not of adult CPBB rats. *Physiology & Behavior*, **52**, 1201-1206.
- van der Staay, F.J., Raaijmakers, W. & Kerbusch, S. (1983). Rapid acquisition of two-way active avoidance in inbred Roman Low Avoidance rats. *Behavior Genetics*, **13**, 435-440.
- van der Staay, F.J., Raaijmakers, W.G.M. & Kerbusch, S. (1992). Effects of chronic dietary choline on temporal discrimination of BN and WAG rats. *Physiology & Behavior*, **51**, 899-908.
- van der Staay, F.J., Raaijmakers, W.G.M., Lammers, A.J.J.C. & Tonnaer, J.A.D.M. (1989). Selective fimbria lesions impair acquisition of working and reference memory of rats in a complex spatial discrimination task. *Behavioural Brain Research*, **32**, 151-161.
- van der Staay, F.J., Raaijmakers, W.G.M., Sakkee, A.N. & van Bezooijen, C.F.A. (1988). Spatial working and reference memory of adult and senescent rats after thiopental anaesthesia. *Neuroscience Research Communications*, **3**, 55-61.
- van der Staay, F.J., Stollenwerk, A., Horváth, E. & Schuurman, T. (1992). Unilateral middle cerebral artery occlusion does not affect water-escape behavior of CFW1 mice. *Neuroscience Research Communications*, **11**(1), 11-18.
- van der Staay, F.J., van Nies, J. & Raaijmakers, W.G.M. (1990). The effects of aging in rats on working and reference memory performance in a spatial holeboard discrimination task. *Behavioral and Neural Biology*, **53**, 356-370.
- van Hulzen, Z.J.M. & van der Staay, F.J. (1991). Spatial memory processing during hippocampal long-term potentiation in rats. *Physiology & Behavior*, **50**, 121-127.

van Luijtelaar, E.L.J.M., Ates, N. & van der Staay, F.J. (1994). The effects of chronic treatment with a calcium channel antagonist on two types of generalized epilepsies in rats. *Pharmacology Biochemistry and Behavior*, **48**, 575-579.

- idem in: G. van Luijtelaar & A.Coenen (Eds.), (1997). *The WAG/Rij rat model of absence epilepsy: ten years of research. A compilation of papers*. Nijmegen: Nijmegen University Press (ISBN 90 373 0365 X), pp. 209-213.

van Luijtelaar, E.L.J.M., van der Staay, F.J. & Kerbusch, J.M.L. (1989). Spatial memory in rats: a cross validation study. *Quarterly Journal of Experimental Psychology*, **41B**, 287-306.

- idem in: G. van Luijtelaar & A.Coenen (Eds.), (1997). *The WAG/Rij rat model of absence epilepsy: ten years of research. A compilation of papers*. Nijmegen: Nijmegen University Press (ISBN 90 373 0365 X), pp. 338-357.

Research papers in books

Blokland, A., Raaijmakers, W. & van der Staay, F.J. (1992). Age-related changes in the response to stressful stimuli in different rat strains. In: A. Blokland, *Animal models of cognitive aging and dementia in the rat: problems and perspectives*. Doctoral dissertation, State University of Limburg, Maastricht, The Netherlands (ISBN 90-5278-033-1), pp. 57-62.

Krechting, B.M., Raaijmakers, W.G.M. & van der Staay, F.J. (1990). Effects of chronic ethanol consumption on shuttlebox avoidance learning in middle-aged and old rats. In: C.F.A. van Bezooijen, R. Ravid & A.A.J. Verhofstad (Eds.), *From gene to man*. Rijswijk: Stichting Gerontologie en Geriatrie (ISBN 90-9003996-1), pp. 169-172.

Raaijmakers, W.G.M., Blokland, A., van der Staay, F.J. & Jolles, J. (1990). Differential behavioural effects of chronic oral administration of Acetyl-L-Carnitine in young and old rats. In: C.F.A. van Bezooijen, R. Ravid & A.A.J. Verhofstad (Eds.), *From gene to man*. Rijswijk: Stichting Gerontologie en Geriatrie (ISBN 90-9003996-1), pp. 173-177.

Raaijmakers, W.G.M., van der Staay, F.J., Collijn, T.H. & Veening, J.G. (1986). Hippocampal morphometry in the rat: age-related changes and modulation by chronic dietary choline enrichment. In: A. Fisher, I. Hanin & C. Lachman (Eds.), *Alzheimer's and Parkinson's diseases: strategies for research and development. Advances in Behavioral Biology*, **29**, 609-613. New York: Plenum Press.

Raaijmakers, W.G.M., van der Staay, F.J., Drinkenburg, W.H.I.M. & Blokland, A. (1990). Age differences and effects of lesions in the nucleus

basalis magnocellularis on a seven-choice task in a radial alley maze. In: C.F.A. van Bezooijen, R. Ravid & A.A.J. Verhofstad (Eds.), *From gene to man*. Rijswijk: Stichting Gerontologie en Geriatrie (ISBN 90-9003996-1), pp. 159-163.

Raaijmakers, W., van Nies, J., Honig, W. & van der Staay, F.J. (1989). Dietary lecithin improves spatial memory in brain-damaged rats. In: R.J. Wurtman, S. Corkin, J.H. Growdon & E. Ritter-Walker (Compilers), *Alzheimer's disease: advances in basic research and therapies* (pp. 671-675) (Proceedings of the Fifth Meeting of the International Study Group on the Pharmacology of Memory Disorders Associated with Aging. Zurich, Switzerland, January 20-22). Cambridge (MA): Center for Brain Sciences and Metabolism Charitable Trust.

Raaijmakers, W.G.M., van Nies, J.H.M. & van der Staay, F.J. (1990). Behavioural effects of chronic dietary lecithin supplementation in adult and aged rats. In: C.F.A. van Bezooijen, R. Ravid & A.A.J. Verhofstad (Eds.), *From gene to man*. Rijswijk: Stichting Gerontologie en Geriatrie (ISBN 90-9003996-1), pp. 164-168.

van der Staay, F.J., Raaijmakers, W.G.M. & Blokland, A. (1990). Age differences in spatial memory of rats in two tasks differing only for the response required to find and obtain the food reward. In: C.F.A. van Bezooijen, R. Ravid & A.A.J. Verhofstad (Eds.), *From gene to man*. Rijswijk: Stichting Gerontologie en Geriatrie (ISBN 90-9003996-1), pp. 154-158.

van der Staay, F.J., Raaijmakers, W.G.M. & Collijn, T.H. (1986). Spatial discrimination and passive avoidance behavior in the rat: age-related changes and modulation by chronic dietary choline enrichment. In: A. Fisher, I. Hanin & C. Lachman (Eds.), *Alzheimer's and Parkinson's diseases: strategies for research and development. Advances in Behavioral Biology*, **29**, 603-608. New York: Plenum Press.

General papers in journals and books

Riekkinen, P., Jr., Schmidt, B.H. & van der Staay, F.J. (1998). Animal models in the development of symptomatic and preventive drug therapies for Alzheimer's disease. *Annals of Medicine*, **30**, 566-576.

Schmidt, B.H., Hinz, V.C., Blokland, A., van der Staay, F.J. & Fanelli, R.J. (1996). Preclinical pharmacology of metrifonate: a promise for Alzheimer therapy. In: R. Becker & E. Giacobini (Eds.), *Alzheimer disease: from molecular biology to therapy*. Boston: Birkhäuser, pp. 217-221.

Schmidt, B.H., Hinz, V.C. & van der Staay, F.J. (1997). Cognition enhancement by metrifonate:

- evidence from animal studies. In: Iqbal, K., Winblad, B., Nishimura, T., Takeda, M. & Wisniewski, H.M. (Eds.), *Alzheimer's disease: biology, diagnosis and therapeutics*. John Wiley & Sons, Ltd., pp. 781-786.
- Schmidt, B.H., Hinz, V.C. & van der Staay F.J. (1998). The preclinical pharmacology of metrifonate, a long-acting and well tolerated cholinesterase inhibitor for Alzheimer therapy. In: A. Fisher, I. Hanin & M. Yoshida (Eds.), *Progress in Alzheimer's and Parkinson's disease. Advances in Behavioral Biology*, **49**, 579-585. New York: Plenum Press (ISBN 0-306-45903-5).
- Schuurman, T., van der Staay, F.J. & Traber, J. (1992). Tierstudien [Animal studies]. In: Riederer, P., Laux, G. & Pödingner, W. (Eds.), *Neuro-Psychopharmaka, Ein Therapie-Handbuch*. Vol. 1: Allgemeine Grundlagen der Pharmakopsychiatrie [Drugs in Neuro-Psychopharmacology, A Manual for Therapy, Vol. 1: Principles of Pharmacological Psychiatry]. Wien: Springer Verlag (ISBN 3-211-82209-7), pp. 67-82.
- Traber, J., van der Staay, F.J. & De Vry, J. (1993). Nimodipine and nervous system function. In: W.-D. Busse, B. Garthoff & F. Seuter (Eds.), *Dihydropyridines. Progress in Pharmacology and Therapy*. Berlin: Springer Verlag (ISBN 3-540-57308-9), pp. 71-80.
- van der Staay, F.J. (1992). Ansatz zur Konstruktvalidierung mittels genetisch definierter Stämme am Beispiel ethologischer Angstmodelle [An approach for the determination of construct validity using genetically defined strains and exemplified with ethological models of fear]. In: J. Oldigs-Kerber & J.P. Leonard (Eds.), *Pharmakopsychologie. Experimentelle und klinische Aspekte [Pharmacopsychology. Experimental and Clinical Aspects]*. Jena: Gustav Fischer Verlag (ISBN 3-334-60424-1), pp. 69-86.
- van der Staay, F.J., Gebert, I. & Freund, W.-D. (1996). Op zoek naar farmacotherapie bij cognitieve stoornissen: Preklinische strategieën en methoden. [The search for pharmacological therapy of cognitive dysfunctions: preclinical strategies and methods]. In: K. Venselaar (Red.), *Revalidatie, medicatie en therapie [Revalidation, medication and therapy]*. Proceedings of the autumn conference of revalidation psychologists, Netherlands Institute for Psychology, Beekbergen, The Netherlands, November 11-12, 1994, pp. 41-54.
- van der Staay, F. & Schuurman, T. (1991). Farmacologische beïnvloeding bij ouderen [Pharmacological treatment in the elderly]. (Themanummer 'Psychofarmaca' [special issue about 'Psychopharmacological substances']), *De Psycholoog*, **26**(11), 495-498.

Theses

- van der Staay, F.J. (1978). *Die quantitativ genetische Analyse von Eigenschaften mittels eines klassisch mendelschen Kreuzungsschemas*. [The quantitative genetic analysis of qualities by a classical Mendelian cross breeding design]. Theoretical Master thesis, Department of Comparative and Physiological Psychology, University of Nijmegen, Nijmegen, The Netherlands (57 pages).
- van der Staay, F.J. (1989). *Behavioral consequences of chronic dietary choline enrichment*. Doctoral dissertation, University of Nijmegen, Nijmegen, The Netherlands (176 pages; ISBN 90-900-2811-0).
- van der Staay, F.J. (1998). *The study of behavioral dysfunctions: an evaluation of selected animal models*. Habilitationsschrift, Ruhr-Universität Bochum, Bochum, Germany (292 pages).
- van der Staay, F.J. & van Attekum-Hendriks, F.C. (1977). *Anwendung eines klassisch mendelschen Kreuzungsschemas*. [Application of a classical Mendelian cross breeding design]. Empirical Master thesis, Department of Comparative and Physiological Psychology, University of Nijmegen, Nijmegen, The Netherlands (87 pages, and Supplement of 38 pages with figures and tables).