



Universiteit  
Leiden  
The Netherlands

## Fading memories : the impact of stress hormones on the retrieval of emotional memories

Tollenaar, M.S.

### Citation

Tollenaar, M. S. (2009, May 13). *Fading memories : the impact of stress hormones on the retrieval of emotional memories*. Retrieved from <https://hdl.handle.net/1887/13789>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/13789>

**Note:** To cite this publication please use the final published version (if applicable).

## References

- Abercrombie, H. C., Speck, N. S., & Monticelli, R. M. (2005). Endogenous cortisol elevations are related to memory facilitation only in individuals who are emotionally aroused. *Psychoneuroendocrinology*, 31, 187-96.
- Abrari, K., Rashidy-Pour, A., Semnanian, S., & Fathollahi, Y. (2008). Administration of corticosterone after memory reactivation disrupts subsequent retrieval of a contextual conditioned fear memory: Dependence upon training intensity. *Neurobiology of Learning and Memory*, 89, 178-184.
- Addis, D. R., Moscovitch, M., Crawley, A. P., & McAndrews, M. P. (2004). Recollective qualities modulate hippocampal activation during autobiographical memory retrieval. *Hippocampus*, 14, 752-762.
- Aerni, A., Traber, R., Hock, C., Roozendaal, B., Schelling, G., Papassotiropoulos, A., Nitsch, R. M., Schnyder, U., & de Quervain, D. J. F. (2004). Low-dose cortisol for symptoms of posttraumatic stress disorder. *American Journal of Psychiatry*, 161, 1488-1490.
- Aickin, M. & Gensler, H. (1996). Adjusting for multiple testing when reporting research results: The Bonferroni vs Holm methods. *American Journal of Public Health*, 86, 726-728.
- Andreano, J. M. & Cahill, L. (2006). Glucocorticoid release and memory consolidation in men and women. *Psychological Science*, 17, 466-470.
- Arnsten, A. F. T. (1998). Catecholamine modulation of prefrontal cortical cognitive function. *Trends in Cognitive Sciences*, 2, 436-447.
- Arrindell, W. A., & Ettema, J. H. M. (1986). *Handleiding SCL-90 [Manual]*. Swets & Zeitlinger, Lisse.
- Au Yeung, C. A., Dalgleish, T., Golden, A. M., & Schartau, P. (2006). Reduced specificity of autobiographical memories following a negative mood induction. *Behaviour Research And Therapy*, 44, 1481-1490.
- Barnhofer, T., Crane, C., Spinhoven, P., & Williams, J. M. (2007). Failures to retrieve specific memories in previously depressed individuals: random errors or content-related? *Research And Therapy*, 45, 1859-1869.
- Barnhofer, T., Kuehn, E. M., & de Jong-Meyer, R. (2005). Specificity of autobiographical memories and basal cortisol levels in patients with major depression. *Psychoneuroendocrinology*, 30, 403-411.
- Bayley, P. J., Hopkins, R. O., & Squire, L. R. (2003). Successful recollection of remote autobiographical memories by amnesic patients with medial temporal lobe lesions. *Neuron*, 38, 135-144.
- Bechara, A., Tranel, D., Damasio, H., Adolphs, R., Rockland, C., & Damasio, A. R. (1995). Double dissociation of conditioning and declarative knowledge relative to the amygdala and hippocampus in humans. *Science*, 269, 1115-1118.
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory (BDI-II). Manual*. The Psychological Corporation: San Antonio, Texas, USA.

## References

---

- Blechert, J., Michael, T., Vriendt, N., Margraf, J., & Wilhelm, F. H. (2007). Fear conditioning in posttraumatic stress disorder: evidence for delayed extinction of autonomic, experiential, and behavioural responses. *Behavior Research Therapy*, 45, 2019-2033.
- Bouton, M. E. (2002). Context, ambiguity, and unlearning: sources of relapse after behavioral extinction. *Biological Psychiatry*, 52, 976-986.
- Bouton, M. E. (2004). Context and behavioral processes in extinction. *Learning & Memory*, 11, 485-494.
- Bouton, M. E., Westbrook, R. F., Corcoran, K. A., & Maren, S. (2006). Contextual and temporal modulation of extinction: behavioral and biological mechanisms. *Biological Psychiatry*, 60, 352-360.
- Bradley, M. M. & Lang, P. J. (1994). Measuring emotion - The Self-Assessment Mannequin and the semantic differential. *Journal of Behavior Therapy and Experimental Psychiatry*, 25, 49-59.
- Bradley, M. M., & Lang, P. J. (2000). Affective reactions to acoustic stimuli. *Psychophysiology*, 37, 204-215.
- Bremner, J. D., Staib, L. H., Kaloupek, D., Southwick, S. M., Soufer, R., & Charney, D. S. (1999). Neural correlates of exposure to traumatic pictures and sound in Vietnam combat veterans with and without posttraumatic stress disorder: A positron emission tomography study. *Biological Psychiatry*, 45, 806-816.
- Bremner, J. D., Vythilingam, M., Anderson, G., Vermetten, E., McGlashan, T., Heninger, G. et al. (2003). Assessment of the hypothalamic-pituitary-adrenal axis over a 24-hour diurnal period and in response to neuroendocrine challenges in women with and without childhood sexual abuse and posttraumatic stress disorder. *Biological Psychiatry*, 54, 710-718.
- Brewin, C. R. & Beaton, A. (2002). Thought suppression, intelligence, and working memory capacity. *Behaviour Research and Therapy*, 40, 923-930.
- Brunet, A., Orr, S. P., Tremblay, J., Robertson, K., Nader, K., & Pitman, R. K. (2008). Effect of post-retrieval propranolol on psychophysiologic responding during subsequent script-driven traumatic imagery in post-traumatic stress disorder. *Journal of Psychiatric Research*, 42, 503-506.
- Bryant, R. A., Sutherland, K., & Guthrie, R. M. (2007). Impaired specific autobiographical memory as a risk factor for posttraumatic stress after trauma. *Journal of Abnormal Psychology*, 116, 837-841.
- Buchanan, T. W. (2007). Retrieval of emotional memories. *Psychological Bulletin*, 133, 761-779.
- Buchanan, T. W. & Lovallo, W. R. (2001). Enhanced memory for emotional material following stress-level cortisol treatment in humans. *Psychoneuroendocrinology*, 26, 307-317.
- Buchanan, T. W., Tranel, D., & Adolphs, R. (2005). Emotional autobiographical memories in amnesic patients with medial temporal lobe damage. *Journal of Neuroscience*, 25, 3151-3160.
- Buchanan, T. W., Tranel, D., & Adolphs, R. (2006). Impaired memory retrieval correlates with individual differences in cortisol response but not autonomic response. *Learning & Memory*, 13, 382-387.

- Buchanan, T. W., Etzel, J. A., Adolphs, R., & Tranel, D. (2006). The influence of autonomic arousal and semantic relatedness on memory for emotional words. *International Journal of Psychophysiology*, 61, 26-33.
- Burke, H. M., Davis, M. C., Otte, C., & Mohr, D. C. (2005). Depression and cortisol responses to psychological stress: A meta-analysis. *Psychoneuroendocrinology*, 30, 846-856.
- Buss, C., Wolf, O. T., Witt, J., & Hellhammer, D. H. (2004). Autobiographic memory impairment following acute cortisol administration. *Psychoneuroendocrinology*, 29, 1093-1096.
- Cabeza, R., Prince, S. E., Daselaar, S. M., Greenberg, D. L., Budde, M., Dolcos, F., LaBar, K. S., & Rubin, D. C. (2004). Brain activity during episodic retrieval of autobiographical and laboratory events: an fMRI study using a novel photo paradigm. *Journal of Cognitive Neuroscience*, 16, 1583-1594.
- Cahill, L. (1999). A neurobiological perspective on emotionally influenced, long-term memory. *Seminars In Clinical Neuropsychiatry*, 4, 266-273.
- Cahill, L., & Alkire, M. T. (2003). Epinephrine enhancement of human memory consolidation: Interaction with arousal at encoding. *Neurobiology of Learning and Memory*, 79, 194-198.
- Cahill, L., Gorski, L., & Le, K. (2003). Enhanced human memory consolidation with post-learning stress: Interaction with the degree of arousal at encoding. *Learning & Memory*, 10, 270-274.
- Cahill, L., & McGaugh, J. L. (1998). Mechanisms of emotional arousal and lasting declarative memory. *Trends in Neurosciences*, 21, 294-299.
- Cahill, L., Prins, B., Weber, M., & McGaugh, J. L. (1994). Beta-adrenergic activation and memory for emotional events. *Nature*, 371, 702-704.
- Cahill, L., & van Stegeren, A. H. (2003). Sex-related impairment of memory for emotional events with beta-adrenergic blockade. *Neurobiology of Learning and Memory*, 79, 81-88.
- Cai, W. H., Blundell, J., Han, J., Greene, R. W., & Powell, C. M. (2006). Postreactivation Glucocorticoids Impair Recall of Established Fear Memory. *Journal of Neuroscience*, 26, 9560-9566.
- Canli, T., Zhao, Z., Desmond, J. E., Kang, E. J., Gross, J., & Gabrieli, J. D. E. (2001). An fMRI study of personality influences on brain reactivity to emotional stimuli. *Behavioral Neuroscience*, 115, 33-42.
- Carlson, N. R. (1998). *Physiology of Behavior* (6th ed.). Massachusetts: Allyn and Bacon.
- Chamberlain, S. R., Muller, U., Blackwell, A. D., Robbins, T. W., & Sahakian, B. J. (2006). Noradrenergic modulation of working memory and emotional memory in humans. *Psychopharmacology (Berl)*, 188, 397-407.
- Conway, M. A. & Pleydell-Pearce, C. W. (2000). The construction of autobiographical memories in the self-memory system. *Psychological Review*, 107, 261-288.
- Corkin, S. (2002). What's new with the amnesic patient HM? *Nature Reviews Neuroscience*, 3, 153-160.
- Croiset, G., Nijsen, M. J. M. A., & Kamphuis, P. J. G. H. (2000). Role of corticotropin-releasing factor, vasopressin and the autonomic nervous system in learning and memory. *European Journal of Pharmacology*, 405, 225-234.

- Dalgleish, T., Williams, J. M., Golden, A. M., Perkins, N., Barrett, L. F., Barnard, P. J., Au Yeung, C. A., Murphy, V., Elward, R., Tchanturia, K., & Watkins, E. (2007). Reduced specificity of autobiographical memory and depression: The role of executive control. *Journal of Experimental Psychology: General, 136*, 23-42.
- Daselaar, S. M., Rice, H. J., Greenberg, D. L., Cabeza, R., LaBar, K. S., & Rubin, D. C. (2008). The spatiotemporal dynamics of autobiographical memory: Neural correlates of recall, emotional intensity, and reliving. *Cerebral Cortex, 18*, 217-229.
- Debiec, J. A. C. E., Doyere, V., Nader, K., & LeDoux, J. E. (2006). Directly reactivated, but not indirectly reactivated, memories undergo reconsolidation in the amygdala. *Proceedings of the National Academy of Sciences, 103*, 3428-3433.
- Debiec, J. A. C. E., & LeDoux, J. E. (2004). Disruption of reconsolidation but not consolidation of auditory fear conditioning by noradrenergic blockade in the amygdala. *Neuroscience, 129*, 267-272.
- Debiec, J. A. C. E., & LeDoux, J. E. (2006). Noradrenergic signaling in the amygdala contributes to the reconsolidation of fear memory: Treatment implications for PTSD. *Annals of the New York Academy of Sciences, 1071*, 521-524.
- Debiec, J. A. C. E., Ledoux, J. E., & Nader, K. (2002). Cellular and systems reconsolidation in the hippocampus. *Neuron, 36*, 527-538.
- de Kloet, E. R., Joels, M., & Holsboer, F. (2005). Stress and the brain: From adaptation to disease. *Nature Reviews Neuroscience, 6*, 463-475.
- de Kloet, E. R., Oitzl, M. S., & Joels, M. (1999). Stress and cognition: are corticosteroids good or bad guys? *Trends in Neurosciences, 22*, 422-426.
- de Kloet, E. R., Vreugdenhil, E., Oitzl, M. S., & Joels, M. (1998). Brain Corticosteroid Receptor Balance in Health and Disease. *Endocrine Reviews, 19*, 269-301.
- Delahanty, D. L., Raimonde, A. J., & Spoonster, E. (2000). Initial posttraumatic urinary cortisol levels predict subsequent PTSD symptoms in motor vehicle accident victims. *Biological Psychiatry, 48*, 940-947.
- de Quervain, D. J. F. (2007). Glucocorticoid-induced reduction of traumatic memories: implications for the treatment of PTSD. *Progress in Brain Research, 167*, 239-247.
- de Quervain, D. J. F., Aerni, A., & Roozendaal, B. (2007). Preventive effect of beta-adrenoceptor blockade on glucocorticoid-induced memory retrieval deficits. *American Journal of Psychiatry, 164*, 967-969.
- de Quervain, D. J. F., Henke, K., Aerni, A., Treyer, V., McGaugh, J. L., Berthold, T., Nitsch, R. M., Buck, A., Roozendaal, B., & Hock, C. (2003). Glucocorticoid-induced impairment of declarative memory retrieval is associated with reduced blood flow in the medial temporal lobe. *European Journal of Neuroscience, 17*, 1296-1302.
- de Quervain, D. J. F. & Margraf, J. (2008). Glucocorticoids for the treatment of post-traumatic stress disorder and phobias: A novel therapeutic approach. *European Journal of Pharmacology, 583*, 365-371.

- de Quervain, D. J. F., Roozendaal, B., Nitsch, R. M., McGaugh, J. L., & Hock, C. (2000). Acute cortisone administration impairs retrieval of long-term declarative memory in humans. *Nature Neuroscience*, 3, 313-314.
- de Rijk, R. H., Wust, S., Meijer, O. C., Zennaro, M. C., Federenko, I. S., Hellhammer, D. H. et al. (2006). A common polymorphism in the mineralocorticoid receptor modulates stress responsiveness. *Journal of Clinical Endocrinology and Metabolism*, 91, 5083-5089.
- Dickerson, S. S. & Kemeny, M. E. (2004). Acute stressors and cortisol responses: A theoretical integration and synthesis of laboratory research. *Psychological Bulletin*, 130, 355-391.
- Diergaarde, L., Schoffelmeer, A. N. M., & De Vries, T. J. (2006).  $\beta$ -adrenoceptor mediated inhibition of long-term reward-related memory reconsolidation. *Behavioural Brain Research*, 170, 333-336.
- Diergaarde, L., Schoffelmeer, A. N. M., & De Vries, T. J. (2008). Pharmacological manipulation of memory reconsolidation: Towards a novel treatment of pathogenic memories. *European Journal of Pharmacology*, 585, 453-457.
- Dillon, D. G., Cooper, J. J., Grent-t-Jong, T., Woldorff, M. G., & LaBar, K. S. (2006). Dissociation of event-related potentials indexing arousal and semantic cohesion during emotional word encoding. *Brain and Cognition*, 62, 43-57.
- Dolcos, F., LaBar, K. S., & Cabeza, R. (2005). Remembering one year later: Role of the amygdala and the medial temporal lobe memory system in retrieving emotional memories. *Proceedings of the national academy of sciences of the United States of America*, 102, 2626-2631.
- Domes, G., Heinrichs, M., Rimmele, U., Reichwald, U., & Hautzinger, M. (2004). Acute stress impairs recognition for positive words - Association with stress-induced cortisol secretion. *Stress-the International Journal on the Biology of Stress*, 7, 173-181.
- Domes, G., Rothfischer, J., Reichwald, U., & Hautzinger, M. (2005). Inverted-U function between salivary cortisol and retrieval of verbal memory after hydrocortisone treatment. *Behavioral Neuroscience*, 119, 512-517.
- Effting, M. & Kindt, M. (2007). Contextual control of human fear associations in a renewal paradigm. *Behaviour Research and Therapy*, 45, 2002-2018.
- Egan, M. F., Kojima, M., Callicott, J. H., Goldberg, T. E., Kolachana, B. S., Bertolino, A. et al. (2003). The BDNF val66met polymorphism affects activity-dependent secretion of BDNF and human memory and hippocampal function. *Cell*, 112, 257-269.
- Elzinga, B. M. & Bremner, J. D. (2002). Are the neural substrates of memory the final common pathway in posttraumatic stress disorder (PTSD)? *Journal of Affective Disorders*, 70, 1-17.
- Elzinga, B. M. & Roelofs, K. (2005). Cortisol-induced impairments of working memory require acute sympathetic activation. *Behavioral Neuroscience*, 119, 98-103.
- Forcato, C., Burgos, V. L., Argibay, P. F., Molina, V. A., Pedreira, M. E., & Maldonado, H. (2007). Reconsolidation of declarative memory in humans. *Learning & Memory*, 14, 295-303.
- Frankland, P. W. & Bontempi, B. (2005). The organization of recent and remote memories. *Nature Reviews Neuroscience*, 6, 119-130.

- Galluccio, L. (2005). Updating reactivated memories in infancy: I. Passive- and active-exposure effects. *Developmental psychobiology*, 47, 1-17.
- Garakani, A., Mathew, S. J., & Charney, D. S. (2006). Neurobiology of anxiety disorders and implications for treatment. *Mount Sinai Journal of Medicine*, 73, 941-949.
- Gilboa, A. (2004). Autobiographical and episodic memory - one and the same? Evidence from prefrontal activation in neuroimaging studies. *Neuropsychologia*, 42, 1336-1349.
- Gilboa, A., Winocur, G., Grady, C. L., Hevenor, S. J., & Moscovitch, M. (2004). Remembering our past: functional neuroanatomy of recollection of recent and very remote personal events. *Cereb. Cortex*, 14, 1214-1225.
- Glannon, W. (2006). Psychopharmacology and memory. *J Med Ethics*, 32, 74-78.
- Goldberg, T. E., Iudicello, J., Russo, C., Elvevag, B., Straub, R., Egan, M. F. et al. (2008). BDNF Val(66) Met polymorphism significantly affects d' in verbal recognition memory at short and long delays. *Biological Psychology*, 77, 20-24.
- Greenberg, D. L., Rice, H. J., Cooper, J. J., Cabeza, R., Rubin, D. C., & LaBar, K. S. (2005). Co-activation of the amygdala, hippocampus and inferior frontal gyrus during autobiographical memory retrieval. *Neuropsychologia*, 43, 659-674.
- Greene, R. L. (1989). Spacing effects in memory: Evidence for a two-process account. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 15, 371-377.
- Halligan, S. L., Clark, D. M., & Ehlers, A. (2002). Cognitive processing, memory, and the development of PTSD symptoms: two experimental analogue studies. *Journal of Behavior Therapy and Experimental Psychiatry*, 33, 73-89.
- Hariri, A. R., Goldberg, T. E., Mattay, V. S., Kolachana, B. S., Callicott, J. H., Egan, M. F., & Weinberger, D. R. (2003). Brain-derived neurotrophic factor val(66)met polymorphism affects human memory-related hippocampal activity and predicts memory performance. *Journal of Neuroscience*, 23, 6690-6694.
- Hariri, A. R. & Weinberger, D. R. (2003). Imaging genomics. *British Medical Bulletin*, 65, 259-270.
- Harvey, A. G., Bryant, R. A., & Dang, S. T. (1998). Autobiographical memory in acute stress disorder. *Journal of Consulting and Clinical Psychology*, 66, 500-506.
- Hermans, D., & De Houwer, J. (1994). Affective and subjective familiarity ratings of 740 Dutch words. *Psychologica Belgica*, 34, 115-139.
- Het, S., Ramlow, G., & Wolf, O. T. (2005). A meta-analytic review of the effects of acute cortisol administration on human memory. *Psychoneuroendocrinology*, 30, 771-784.
- Het, S., & Wolf, O. T. (2007). Mood changes in response to psychosocial stress in healthy young women: Effects of pretreatment with cortisol. *Behavioral Neuroscience*, 121, 11-20.
- Holmes, E. A., Moulds, M. L., & Kavanagh, D. (2007). Memory suppression in PTSD treatment? *Science*, 318, 1722.

- Hupbach, A., Gomez, R., Hardt, O., & Nadel, L. (2007). Reconsolidation of episodic memories: A subtle reminder triggers integration of new information. *Learning & Memory*, 14, 47-53.
- Joels, M., Pu, Z. W., Wiegert, O., Oitzl, M. S., & Krugers, H. J. (2006). Learning under stress: How does it work? *Trends in Cognitive Sciences*, 10, 152-158.
- Kangas, M., Henry, J. L., & Bryant, R. A. (2005). A prospective study of autobiographical memory and posttraumatic stress disorder following cancer. *Journal of Consulting and Clinical Psychology*, 73, 293-299.
- Kensinger, E. A. & Corkin, S. (2004). Two routes to emotional memory: Distinct neural processes for valence and arousal. *Proceedings of the National Academy of Sciences of the United States of America*, 101, 3310-3315.
- Kirschbaum, C., Kudielka, B. M., Gaab, J., Schommer, N. C., & Hellhammer, D. H. (1999). Impact of gender, menstrual cycle phase, and oral contraceptives on the activity of the hypothalamus-pituitary-adrenal axis. *Psychosomatic Medicine*, 61, 154-162.
- Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1993). The 'Trier Social Stress Test'--a tool for investigating psychobiological stress responses in a laboratory setting. *Neuropsychobiology*, 28, 76-81.
- Kirschbaum, C., Pirke, K. M., & Hellhammer, D. H. (1995). Preliminary evidence for reduced cortisol responsivity to psychological stress in women using oral-contraceptive medication. *Psychoneuroendocrinology*, 20, 509-514.
- 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 Sciences*, 58, 1475-1483.
- Kirschbaum, C., Wust, S., & Hellhammer, D. H. (1992). Consistent sex-differences in cortisol responses to psychological stress. *Psychosomatic Medicine*, 54, 648-657.
- Kleim, B. & Ehlers, A. (2008). Reduced autobiographical memory specificity predicts depression and posttraumatic stress disorder after recent trauma. *Journal of Consulting and Clinical Psychology*, 76, 231-242.
- Kopelman, M., Wilson, B., & Baddeley, A. (1990). *The Autobiographical Memory Interview*. Bury St. Edmunds, Thames Valley Test Company.
- Kuhlmann, S., Kirschbaum, C., & Wolf, O. T. (2005). Effects of oral cortisol treatment in healthy young women on memory retrieval of negative and neutral words. *Neurobiology of Learning and Memory*, 83, 158-162.
- Kuhlmann, S., Piel, M., & Wolf, O. T. (2005). Impaired memory retrieval after psychosocial stress in healthy young men. *Journal of Neuroscience*, 25, 2977-2982.
- Kuhlmann, S. & Wolf, O. T. (2005). Cortisol and memory retrieval in women: influence of menstrual cycle and oral contraceptives. *Psychopharmacology (Berl)*, 183, 65-71.
- Kuhlmann, S. & Wolf, O. T. (2006a). Arousal and cortisol interact in modulating memory consolidation in healthy young men. *Behavioral Neuroscience*, 120, 217-223.

## References

---

- Kuhlmann, S. & Wolf, O. T. (2006b). A non-arousing test situation abolishes the impairing effects of cortisol on delayed memory retrieval in healthy women. *Neuroscience Letters*, 399, 268-272.
- Labar, K. S. (2007). Beyond fear: Emotional memory mechanisms in the human brain. *Current Directions in Psychological Science*, 16, 173-177.
- LaBar, K. S. & Cabeza, R. (2006). Cognitive neuroscience of emotional memory. *Nature Reviews Neuroscience*, 7, 54-64.
- Ledoux, J. E. (2000). Emotion circuits in the brain. *Annual Review of Neuroscience*, 23, 155-184.
- Leppanen, J. M. (2006). Emotional information processing in mood disorders: a review of behavioral and neuroimaging findings. *Current Opinion in Psychiatry*, 19, 34-39.
- Levine, B. (2004). Functional neuroimaging of autobiographical memory. *Brain and Cognition*, 54, 131.
- 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. *Behavioral Neuroscience*, 113, 420-430.
- Lupien, S. J. & McEwen, B. S. (1997). The acute effects of corticosteroids on cognition: Integration of animal and human model studies. *Brain Research Reviews*, 24, 1-27.
- Lupien, S. J. & Lepage, M. (2001). Stress, memory, and the hippocampus: can't live with it, can't live without it. *Behavioural Brain Research*, 127, 137-158.
- Maheu, F. S., Joober, R., Beaulieu, S., & Lupien, S. J. (2004). Differential effects of adrenergic and corticosteroid hormonal systems on human short- and long-term declarative memory for emotionally arousing material. *Behavioral Neuroscience*, 118, 420-428.
- Maheu, F. S., Joober, R., & Lupien, S. J. (2005). Declarative memory after stress in humans: differential involvement of the beta-adrenergic and corticosteroid systems. *Journal of Clinical Endocrinology & Metabolism*, 90, 1697-1704.
- Manly, T., Robertson, I. H., Galloway, M., & Hawkins, K. (1999). The absent mind: further investigations of sustained attention to response. *Neuropsychologia*, 37, 661-670.
- Maroun, M. & Akirav, I. (2007). Arousal and stress effects on consolidation and reconsolidation of recognition memory. *Neuropsychopharmacology*, Apr 11.
- Mason, J. W., Giller, E. L., Kosten, T. R., Ostroff, R. B., & Podd, L. (1986). Urinary free-cortisol levels in posttraumatic-stress-disorder patients. *Journal of Nervous and Mental Disease*, 174, 145-149.
- McCleery, J. M. & Harvey, A. G. (2004). Integration of psychological and biological approaches to trauma memory: Implications for pharmacological prevention of PTSD. *Journal of Traumatic Stress*, 17, 485-496.
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *New England Journal of Medicine*, 338, 171-179.
- McGaugh, J. L. (2000). Neuroscience - Memory - a century of consolidation. *Science*, 287, 248-251.

- McNally, R. J. (1998). Information-processing abnormalities in anxiety disorders: Implications for cognitive neuroscience. *Cognition & Emotion*, 12, 479-495.
- Milekic, M. H. & Alberini, C. M. (2002). Temporally graded requirement for protein synthesis following memory reactivation. *Neuron*, 36, 521-525.
- Miller, M. M., Altemus, M., Dębiec J., LeDoux, J. E., Phelps, E. A. (2004). Propranolol impairs reconsolidation of conditioned fear in humans. *Society for Neuroscience Abstract 2004* (208.2).
- Mitchell, C. J., De Houwer, J., & Lovibond, P. F. (in press). The propositional nature of human associative learning. *Behavioral and Brain Sciences*
- Moscovitch, M., Nadel, L., Winocur, G., Gilboa, A., & Rosenbaum, R. S. (2006). The cognitive neuroscience of remote episodic, semantic and spatial memory. *Current Opinion in Neurobiology*, 16, 179-190.
- Moscovitch, M., Rosenbaum, R. S., Gilboa, A., Addis, D. R., Westmacott, R., Grady, C. et al. (2005). Functional neuroanatomy of remote episodic, semantic and spatial memory: a unified account based on multiple trace theory. *Journal of Anatomy*, 207, 35-66.
- Nadel, L. & Moscovitch, M. (1997). Memory consolidation, retrograde amnesia and the hippocampal complex. *Current Opinion in Neurobiology*, 7, 217-227.
- Nader, K., Schafe, G. E., & Le Doux, J. E. (2000). Fear memories require protein synthesis in the amygdala for reconsolidation after retrieval. *Nature*, 406, 722-726.
- Nater, U. M., La Marca, R., Florin, L., Moses, A., Langhans, W., Koller, M. M., & Ehlert, U. (2006). Stress-induced changes in human salivary alpha-amylase activity--associations with adrenergic activity. *Psychoneuroendocrinology*, 31, 49-58.
- Nemeroff, C. B. & Vale, W. W. (2005). The neurobiology of depression: Inroads to treatment and new drug discovery. *Journal of Clinical Psychiatry*, 66, 5-13.
- O'Carroll, R. E., Drysdale, E., Cahill, L., Shajahan, P., & Ebmeier, K. P. (1999). Stimulation of the noradrenergic system enhances and blockade reduces memory for emotional material in man. *Psychological Medicine*, 29, 1083-1088.
- O'Donnell, T., Hegadoren, K. M., & Coupland, N. C. (2004). Noradrenergic mechanisms in the pathophysiology of post-traumatic stress disorder. *Neuropsychobiology*, 50, 273-283.
- Oei, N. Y. L., Elzinga, B. M., Wolf, O. T., de Ruiter, M. B., Damoiseaux, J. S., Kuijer, J. P. A., Veltman, D. J., Scheltens, P., & Rombouts, S. A. R. B. (2007). Glucocorticoids decrease hippocampal and prefrontal activation during declarative memory retrieval in young men. *Brain Imaging and Behavior*, 1, 31-41.
- Oei, N. Y. L., Everaerd, W. T. A. M., Elzinga, B. M., van Well, S., Bermond, B. (2006). Psychosocial stress impairs working memory at high loads: an association with cortisol levels and memory retrieval. *Stress*, 9 (03), 1-9.
- Oei, N. Y. L., Tollenaar, M. S., Elzinga, B. M., & Spinhoven, P. (Submitted). Hydrocortisone reduces emotional distracter interference in working memory.

- Okuda, S., Roozendaal, B., & McGaugh, J. L. (2004). Glucocorticoid effects on object recognition memory require training-associated emotional arousal. *Proceedings of the national academy of sciences of the United States of America, 101*, 853-858.
- Olff, M., Guzelcan, Y., de Vries, G. J., Assies, J., & Gersons, B. P. (2006). HPA- and HPT-axis alterations in chronic posttraumatic stress disorder. *Psychoneuroendocrinology, 31*, 1220-1230.
- Orr, S. P., Metzger, L. J., & Pitman, R. K. (2002). Psychophysiology of post-traumatic stress disorder. *Psychiatric Clinics of North America, 25*, 271-293.
- Palomba, D., Angrilli, A., Mini, A. (1997). Visual evoked potentials, heart rate responses and memory to emotional pictorial stimuli. *International Journal of Psychophysiology, 27*, 55-67.
- Paquette, V., Levesque, J., Mensour, B., Leroux, J. M., Beaudoin, G., Bourgouin, P., & Beauregard, M. (2003). "Change the mind and you change the brain": effects of cognitive-behavioral therapy on the neural correlates of spider phobia. *Neuroimage, 18*, 401-409.
- Phelps, E. A. (2004). Human emotion and memory: interactions of the amygdala and hippocampal complex. *Current Opinion in Neurobiology, 14*, 198-202.
- Pitman, R. K. & Delahanty, D. L. (2005). Conceptually driven pharmacologic approaches to acute trauma. *CNS Spectrums, 10*, 99-106.
- Pitman, R. K. & Orr, S. P. (1990). 24-hour urinary cortisol and catecholamine excretion in combat-related Posttraumatic Stress Disorder. *Biological Psychiatry, 27*, 245-247.
- Pitman, R. K., Orr, S. P., Forgue, D. F., Dejong, J. B., Claiborn, J. M. (1987). Psychophysiological assessment of Posttraumatic-Stress-Disorder imagery in Vietnam combat veterans. *Archives of General Psychiatry, 44*, 970-975.
- Pitman, R. K., Sanders, K. M., Zusman, R. M., Healy, A. R., Cheema, F., Lasko, N. B., Cahill, L., & Orr, S. P. (2002). Pilot study of secondary prevention of posttraumatic stress disorder with propranolol. *Biological Psychiatry, 51*, 189-192.
- Pitman, R. K., Shalev, A. Y., & Orr, S. P. (2000). Post-Traumatic Stress Disorder: Emotion, conditioning, and memory. In M. S. Gazzaniga, *The new cognitive Neurosciences* (2nd ed.) (1133-1148), The MIT press, Cambridge, Massachusetts, London, England.
- Pruessner, J. C., Hellhammer, D. H., & Kirschbaum, C. (1999). Low self-esteem, induced failure and the adrenocortical stress response. *Personality and Individual Differences, 27*, 477-489.
- Pruessner, J. C., Kirschbaum, C., Meinlschmid, G., & Hellhammer, D. H. (2003). Two formulas for computation of the area under the curve represent measures of total hormone concentration versus time-dependent change. *Psychoneuroendocrinology, 28*, 916-931.
- Przybylski, J., Roullet, P., & Sara, S. J. (1999). Attenuation of emotional and nonemotional memories after their reactivation: role of beta adrenergic receptors. *Journal of Neuroscience, 19*, 6623-6628.
- Przybylski, J. & Sara, S. J. (1997). Reconsolidation of memory after its reactivation. *Behavioural Brain Research, 84*, 241-246.

- Raes, F., Hermans, D., Williams, J. M., Demyttenaere, K., Sabbe, B., Pieters, G., & Eelen, P. (2006). Is overgeneral autobiographical memory an isolated memory phenomenon in major depression? *Memory, 14*, 584-594.
- Raison, C. L. & Miller, A. H. (2003). When not enough is too much: The role of insufficient glucocorticoid signaling in the pathophysiology of stress-related disorders. *American Journal of Psychiatry, 160*, 1554-1565.
- Ramos, B. P., & Arnsten, A. F. T. (2007). Adrenergic pharmacology and cognition: Focus on the prefrontal cortex. *Pharmacology & Therapeutics, 113*, 523-536.
- Resnick, H. S., Yehuda, R., Pitman, R. K., & Foy, D. W. (1995). Effect of previous trauma on acute plasma-cortisol level following rape. *American Journal of Psychiatry, 152*, 1675-1677.
- Rohleder, N., Nater, U. M., Wolf, J. M., Ehlert, U., & Kirschbaum, C. (2004). Psychosocial stress-induced activation of salivary alpha-amylase - An indicator of sympathetic activity? *Biobehavioral Stress Response: Protective and Damaging Effects, 1032*, 258-263.
- Rohleder, N., Wolf, J. M., Maldonado, E. F., & Kirschbaum, C. (2006). The psychosocial stress-induced increase in salivary alpha-amylase is independent of saliva flow rate. *Psychophysiology, 43*, 645-652.
- Roozendaal, B. (2002). Stress and memory: Opposing effects of glucocorticoids on memory consolidation and memory retrieval. *Neurobiology of Learning and Memory, 78*, 578-595.
- Roozendaal, B., de Quervain, D. J. F., Schelling, G., & McGaugh, J. L. (2004). A systemically administered beta-adrenoceptor antagonist blocks corticosterone-induced impairment of contextual memory retrieval in rats. *Neurobiology of Learning and Memory, 81*, 150-154.
- Roozendaal, B., Griffith, Q. K., Buranday, J., de Quervain, D. J. F., & McGaugh, J. L. (2003). The hippocampus mediates glucocorticoid-induced impairment of spatial memory retrieval: Dependence on the basolateral amygdala. *Proceedings of the National Academy of Sciences of the United States of America, 100*, 1328-1333.
- Roozendaal, B., Hahn, E. L., Nathan, S. V., de Quervain, D. J. F., & McGaugh, J. L. (2004). Glucocorticoid effects on memory retrieval require concurrent noradrenergic activity in the hippocampus and basolateral amygdala. *Journal of Neuroscience, 24*, 8161-8169.
- Roozendaal, B., McReynolds, J. R., & McGaugh, J. L. (2004). The basolateral amygdala interacts with the medial prefrontal cortex in regulating glucocorticoid effects on working memory impairment. *Journal of Neuroscience, 24*, 1385-1392.
- Roozendaal, B., Okuda, S., de Quervain, D. J. F., & McGaugh, J. L. (2006). Glucocorticoids interact with emotion-induced noradrenergic activation in influencing different memory functions. *Neuroscience, 138*, 901-910.
- Rudy, J. W., Biedenkapp, J. C., & O'Reilly, R. C. (2005). Prefrontal cortex and the organization of recent and remote memories: an alternative view. *Learning & Memory, 12*, 445-446.
- Sanchez, M. M., Young, L. J., Plotsky, P. M., & Insel, T. R. (2000). Distribution of corticosteroid receptors in the rhesus brain: Relative absence of glucocorticoid receptors in the hippocampal formation. *Journal of Neuroscience, 20*, 4657-4668.

## References

---

- Sapolsky, R. M. (2003). Stress and plasticity in the limbic system. *Neurochemical Research, 28*, 1735-1742.
- Sapolsky, R. M., Romero, L. M., & Munck, A. U. (2000). How do glucocorticoids influence stress responses? Integrating permissive, suppressive, stimulatory, and preparative actions. *Endocrine Reviews, 21*, 55-89.
- Sara, S. J. (2000). Retrieval and reconsolidation: toward a neurobiology of remembering. *Learning & Memory, 7*, 73-84.
- Schelling, G., Kilger, E., Roozendaal, B., de Quervain, D. J. F., Biegel, J., Dagge, A., Rothenhausler, H. B., Krauseneck, T., Nollert, G., & Kapfhammer, H. P. (2004). Stress doses of hydrocortisone, traumatic memories, and symptoms of posttraumatic stress disorder in patients after cardiac surgery: A randomized study. *Biological Psychiatry, 55*, 627-633.
- Schelling, G., Roozendaal, B., & de Quervain, D. J. F. (2004). Can posttraumatic stress disorder be prevented with glucocorticoids? *Biobehavioral Stress Response: Protective and Damaging Effects, 1032*, 158-166.
- Scoville, W. B. & Milner, B. (1957). Loss of recent memory after bilateral hippocampal lesions. *Journal of Neurology Neurosurgery and Psychiatry, 20*, 11-21.
- Shalev, A. Y., Videlock, E. J., Peleg, T., Segman, R., Pitman, R. K., & Yehuda, R. (2008). Stress hormones and post-traumatic stress disorder in civilian trauma victims: a longitudinal study. Part I: HPA axis responses. *International Journal of Neuropsychopharmacology, 11*, 365-372.
- Sharot, T., Delgado, M. R., & Phelps, E. A. (2004). How emotion enhances the feeling of remembering. *Nature Neuroscience, 7*, 1376-1380.
- Shin, L. M., Orr, S. P., Carson, M. A., Rauch, S. L., Macklin, M. L., Lasko, N. B., Peters, P. M., Metzger, L. J., Dougherty, D. D., Cannistraro, P. A., Alpert, N. M., Fischman, A. J. & Pitman, R. K. (2004). Regional cerebral blood flow in the amygdala and medial prefrontal cortex during traumatic imagery in male and female Vietnam veterans with PTSD. *Archives of General Psychiatry, 61*, 168-176.
- Simons, J. S. & Spiers, H. J. (2003). Prefrontal and medial temporal lobe interactions in long-term memory. *Nature Reviews Neuroscience, 4*, 637-648.
- Smeets, T., Giesbrecht, T., Jelicic, M., & Merckelbach, H. (2007). Context-dependent enhancement of declarative memory performance following acute psychosocial stress. *Biological Psychology, 76*, 116-123.
- Smeets, T., Jelicic, M., & Merckelbach, H. (2006). The effect of acute stress on memory depends on word valence. *International Journal of Psychophysiology, 62*, 30-37.
- Smeets, T., Otgaar, H., Candel, I., & Wolf, O. T. (2008) True or false? Memory is differentially affected by stress-induced cortisol elevations and sympathetic activity at consolidation and retrieval. *Psychoneuroendocrinology, 33*, 1378-86.
- Smith, A. P. R., Henson, R. N. A., Dolan, R. J., & Rugg, M. D. (2004). fMRI correlates of the episodic retrieval of emotional contexts. *Neuroimage, 22*, 868-878.

- Smith, A. P. R., Stephan, K. E., Rugg, M. D., & Dolan, R. J. (2006). Task and content modulate amygdala-hippocampal connectivity in emotional retrieval. *Neuron*, 49, 631-638.
- Soravia, L. M., Heinrichs, M., Aerni, A., Maroni, C., Schelling, G., Ehlert, U., Roozendaal, B., & de Quervain, D. J. F. (2006). Glucocorticoids reduce phobic fear in humans. *Proceedings of the National Academy of Sciences*, 103, 5585-5590.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Spinthonen, P., Bockting, C. L. H., Kremers, I. P., Schene, A. H., & Williams, J. M. G. (2007). The endorsement of dysfunctional attitudes is associated with an impaired retrieval of specific autobiographical memories in response to matching cues. *Memory*, 15, 324-338.
- Spinthonen, P., Ormel, J., Sloekers, P. P., Kemper, G. I., Speckens, A. E., & Van Hemert, A. M. (1997). A validation study of the Hospital Anxiety and Depression Scale (HADS) in different groups of Dutch subjects. *Psychologocal Medicine*, 27, 363-370.
- Squire, L. R. (1992). Memory and the hippocampus - A synthesis from findings with rats, monkeys, and humans. *Psychological Review*, 99, 195-231.
- Squire, L. R. & Alvarez, P. (1995). Retrograde-amnesia and memory consolidation - A neurobiological perspective. *Current Opinion in Neurobiology*, 5, 169-177.
- Squire, L. R., Stark, C. E., & Clark, R. E. (2004). The medial temporal lobe. *Annual Reviews - Neuroscience*, 27, 279-306.
- Steinorth, S., Levine, B., & Corkin, S. (2005). Medial temporal lobe structures are needed to re-experience remote autobiographical memories: evidence from H.M. and W.R. *Neuropsychologia*, 43, 479-496.
- Sterpenich, V., D'Argembeau, A., Desseilles, M., Balteau, E., Albouy, G., Vandewalle, G., Degueldre, C., Luxen, A., Collette, F. et al. (2006). The locus ceruleus is involved in the successful retrieval of emotional memories in humans. *The Journal Of Neuroscience: The Official Journal Of The Society For Neuroscience*, 26, 7416-7423.
- Strange, B. A. & Dolan, R. J. (2004). Beta-Adrenergic modulation of emotional memory-evoked human amygdala and hippocampal responses. *Proceedings of the National Academy of Sciences of the United States of America*, 101, 11454-11458.
- Sutin, A. R. & Robins, R. W. (2007). Phenomenology of autobiographical memories: The memory experiences questionnaire. *Memory*, 15, 390-411.
- Suzuki, A., Josselyn, S. A., Frankland, P. W., Masushige, S., Silva, A. J., & Kida, S. (2004). Memory reconsolidation and extinction have distinct temporal and biochemical signatures. *Journal of Neuroscience*, 24, 4787-4795.
- Svaldi, J. J. & Mackinger, H. F. (2003). Change in the specificity of autobiographical memories through mood induction / Veranderung der Spezifität autobiographischer Erinnerungen durch Stimmungsinduktion. *Zeitschrift-für-Klinische-Psychologie,-Psychiatrie-und-Psychotherapie*, 51, 144-157.

- Svoboda, E., McKinnon, M. C., & Levine, B. (2006). The functional neuroanatomy of autobiographical memory: A meta-analysis. *Neuropsychologia*, 44, 2189-2208.
- Takashima, A., Petersson, K. M., Rutters, F., Tendolkar, I., Jensen, O., Zwarts, M. J., McNaughton, B. L., & Fernandez, G. (2006). Declarative memory consolidation in humans: a prospective functional magnetic resonance imaging study. *Proceedings of the National Academy of Sciences U.S.A.*, 103, 756-761.
- Tollenaar, M. S., Elzinga B. M., Spinhoven, P. & Everaerd, W. T. A. M. (2008a). The effects of cortisol increase on long-term memory retrieval during and after acute psychosocial stress. *Acta Psychologica*, 127, 542-552.
- Tollenaar, M. S., Elzinga, B. M., Spinhoven, P., & Everaerd, W. T. A. M. (2008b). Long-term outcomes of memory retrieval under stress. *Behavioral Neuroscience*, 122, 697-703.
- Tollenaar, M. S., Elzinga, B. M., Spinhoven, P., & Everaerd, W. T. A. M. (2009). Immediate and prolonged effects of cortisol, but not propranolol, on memory retrieval in healthy young men. *Neurobiology of Learning and Memory*, 91, 23-31.
- Tronel, S. & Alberini, C. M. (2007). Persistent disruption of a traumatic memory by postretrieval inactivation of glucocorticoid receptors in the amygdala. *Biological Psychiatry*, 62, 33-39.
- Tronson, N. C. & Taylor, J. R. (2007). Molecular mechanisms of memory reconsolidation. *Nature Reviews Neuroscience*, 8, 262-275.
- Tsuchiya, N. & Adolphs, R. (2007). Emotion and consciousness. *Trends in Cognitive Sciences*, 11, 158-167.
- Tulving, E. (1972). Episodic and semantic memory. In E. Tulving & W. Donaldson (Eds.), *Organization of memory*. New York: Academic Press.
- Tulving, E. (2002). Episodic memory: From mind to brain. *Annual Review Of Psychology*, 53, 1-25.
- Vaiva, G., Ducrocq, F., Jezequel, K., Averland, B., Lestavel, P., Brunet, A., & Marmar, C. R. (2003). Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma. *Biological Psychiatry*, 54, 947-949.
- van Aken, M. O., Romijn, J. A., Miltenburg, J. A., & Lentjes, E. G. W. M. (2003). Automated measurement of salivary cortisol. *Clinical Chemistry*, 49, 1408-1409.
- Vander, A. J., Sherman, J., & Luciano, D. (2001). *Human Physiology, The mechanisms of body function* (8th ed.). New York: McGraw-Hill.
- van der Does, A. J. W. (2002). *BDI-II-NL Handleiding. De Nederlandse versie van de Beck Depression Inventory-second edition [BDI-II Dutch manual]*. Swets & Zeitlinger (Lisse)
- van Stegeren, A. H. (2005). Beta-blockers in post-traumatic stress disorder: uses and controversies. *Expert Review of Neurotherapeutics*, 5, 699-702.
- van Stegeren, A. H. (2008). The role of the noradrenergic system in emotional memory. *Acta Psychologica*, 127, 532-541.

- van Stegeren, A. H., Everaerd, W. T. A. M., Cahill, L., McGaugh, J. L., & Gooren, L. J. G. (1998). Memory for emotional events: differential effects of centrally versus peripherally acting beta-blocking agents. *Psychopharmacology, 138*, 305-310.
- van Stegeren, A. H., Everaerd, W. T. A. M., Gooren, L. J. G. (2002). The effect of beta-adrenergic blockade after encoding on memory of an emotional event. *Psychopharmacology, 163*, 202-212.
- van Stegeren, A. H., Goekoop, R., Everaerd, W. T. A. M., Scheltens, P., Barkhof, F., Kuijer, J. P. A., & Rombouts, S. R. A. B. (2005). Noradrenaline mediates amygdala activation in men and women during encoding of emotional material. *Neuroimage, 24*, 898-909.
- van Stegeren, A. H., Rohleder, N., Everaerd, W. T. A. M., & Wolf, O. T. (2005). Salivary alpha amylase as marker for adrenergic activity during stress: Effect of betablockade. *Psychoneuroendocrinology, 31*, 137-141.
- van Stegeren, A. H., Wolf, O. T., Everaerd, W. T. A. M., Scheltens, P., Barkhof, F., & Rombouts, S. A. (2007). Endogenous cortisol level interacts with noradrenergic activation in the human amygdala. *Neurobiology of Learning and Memory, 87*, 57-66.
- Walker, M. P., Brakefield, T., Hobson, J. A., & Stickgold, R. (2003). Dissociable stages of human memory consolidation and reconsolidation. *Nature, 425*, 616-620.
- Wang, X. Y., Zhao, M., Ghitza, U. E., Li, Y. Q., & Lu, L. (2008). Stress impairs reconsolidation of drug memory via glucocorticoid receptors in the basolateral amygdala. *Journal of Neuroscience, 28*, 5602-5610.
- Weis, F., Kilger, E., Roozendaal, B., de Quervain, D. J. F., Lamm, P., Schmidt, M., Schmolz, M., Briegel, J. & Schelling, G. (2006). Stress doses of hydrocortisone reduce chronic stress symptoms and improve health-related quality of life in high-risk patients after cardiac surgery: A randomized study. *Journal of Thoracic and Cardiovascular Surgery, 131*, 277-282.
- Wessel, I., Overwijk, S., Verwoerd, J., & de Vrieze, N. (2008). Pre-stressor cognitive control is related to intrusive cognition of a stressful film. *Behaviour Research and Therapy, 46*, 496-513.
- Williams, J. M. G., Barnhofer, T., Crane, C., Hermans, D., Raes, F., Watkins, E., & Dalgleish, T. (2007). Autobiographical memory specificity and emotional disorder. *Psychological Bulletin, 133*, 122-148.
- Williams, J. M. G. & Broadbent, K. (1986). Autobiographical memory in suicide attempts. *Journal of Abnormal Psychology, 95*, 144-149.
- Williams, J. M. G. & Scott, J. (1988). Autobiographical memory in depression. *Psychological Medicine, 18*, 689-695.
- Wolf, O. T. (2003). HPA axis and memory. *Best Practice & Research Clinical Endocrinology & Metabolism, 17*, 287-299.
- Wolf, O. T. (2008). The influence of stress hormones on emotional memory: Relevance for psychopathology. *Acta Psychologica, 127*, 512-531.

## References

---

- Wolf, O. T., Convit, A., McHugh, P. F., Kandil, E., Thorn, E. L., De Santi, S., McEwen, B. S., & de Leon, M. J. (2001). Cortisol differentially affects memory in young and elderly men. *Behavioral Neuroscience, 115*, 1002-1011.
- Wolf, O. T., Schommer, N. C., Hellhammer, D. H., McEwemn, B. S. & Kirschbaum, C. (2001). The relationship between stress induced cortisol levels and memory differs between men and women. *Psychoneuroendocrinology, 26*, 711-720.
- Wolf, O. T., Schommer, N. C., Hellhammer, D. H., Reischies, F. M. & Kirschbaum, C. (2002). Moderate psychosocial stress appears not to impair recall of words learned 4 weeks prior to stress exposure. *Stress 5*, 59-64.
- Wust, S., Federenko, I. S., van Rossum, E. F. C., Koper, J. W., Kumsta, R., Entringer, S. et al. (2004). A psychobiological perspective on genetic determinants of hypothalamus-pituitary-adrenal axis activity. *Biobehavioral Stress Response: Protective and Damaging Effects, 1032*, 52-62.
- Wust, S., van Rossum, E. F. C., Federenko, I. S., Koper, J. W., Kumsta, R., & Hellhammer, D. H. (2004). Common polymorphisms in the glucocorticoid receptor gene are associated with adrenocortical responses to psychosocial stress. *Journal of Clinical Endocrinology and Metabolism, 89*, 565-573.
- Yang, Y. L., Chao, P. K., & Lu, K. T. (2005). Systemic and intra-amygdala administration of glucocorticoid agonist and antagonist modulate extinction of conditioned fear. *Neuropsychopharmacology, 31*, 912-924.
- Yehuda, R. (2001). Biology of posttraumatic stress disorder. *The Journal of Clinical Psychiatry, 62 (Suppl 17)*, 41-46.
- Yehuda, R., Harvey, P. D., Buchsbaum, M., Tischler, L., & Schmeidler, J. (2007). Enhanced effects of cortisol administration on episodic and working memory in aging veterans with PTSD. *Neuropsychopharmacology, 32*, 2581-2591.
- Yehuda, R., McFarlane, A. C., & Shalev, A. Y. (1998). Predicting the development of posttraumatic stress disorder from the acute response to a traumatic event. *Biological Psychiatry, 44*, 1305-1313.
- Yehuda, R., Southwick, S., Giller, E. L., Ma, X. W., & Mason, J. W. (1992). Urinary catecholamine excretion and severity of ptsd symptoms in vietnam combat veterans. *Journal of Nervous and Mental Disease, 180*, 321-325.
- Yehuda, R., Teicher, M. H., Trestman, R. L., Levengood, R. A., & Siever, L. J. (1996). Cortisol regulation in posttraumatic stress disorder and major depression: a chronobiological analysis. *Biological Psychiatry, 40*, 79-88.
- Young, A. H. (2006). Antiglucocoticoid treatments for depression. *Australian and New Zealand Journal of Psychiatry, 40*, 402-405.
- Young, E. A. & Breslau, N. (2004). Saliva cortisol in posttraumatic stress disorder: A community epidemiologic study. *Biological Psychiatry, 56*, 205-209.