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References

- Aharonovich, E., Amrhein, P.C., Bisaga, A., Nunes, E.V., Hasin, D.S., 2008. Cognition, commitment language, and behavioral change among cocaine-dependent patients. *Psychol Addict Behav* 22, 557-562.
- Aharonovich, E., Hasin, D.S., Brooks, A.C., Liu, X., Bisaga, A., Nunes, E.V., 2006. Cognitive deficits predict low treatment retention in cocaine dependent patients. *Drug Alcohol Depend* 81, 313-322.
- Ahmadi, J., Kampman, K.M., Oslin, D.M., Pettinati, H.M., Dackis, C., Sparkman, T., 2009. Predictors of treatment outcome in outpatient cocaine and alcohol dependence treatment. *Am J Addict* 18, 81-86.
- Alterman, A.I., McKay, J.R., Mulvaney, F.D., Cnaan, A., Cacciola, J.S., Tourian, K.A., Rutherford, M.J., Merikle, E.P., 2000. Baseline prediction of 7-month cocaine abstinence for cocaine dependence patients. *Drug Alcohol Depend* 59, 215-221.
- Alvarez, Y., Farre, M., Fonseca, F., Torrens, M., 2010. Anticonvulsant drugs in cocaine dependence: a systematic review and meta-analysis. *J Subst Abuse Treat* 38, 66-73.
- Alvarez, Y., Perez-Mana, C., Torrens, M., Farre, M., 2013. Antipsychotic drugs in cocaine dependence: a systematic review and meta-analysis. *J Subst Abuse Treat* 45, 1-10.
- Amato, L., Minozzi, S., Pani, P.P., Davoli, M., 2007. Antipsychotic medications for cocaine dependence. *Cochrane Database Syst Rev*, CD006306.
- Amato, L., Minozzi, S., Pani, P.P., Solimini, R., Vecchi, S., Zuccaro, P., Davoli, M., 2011. Dopamine agonists for the treatment of cocaine dependence. *Cochrane Database Syst Rev*, CD003352.
- American Psychiatric Association, 1994. *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.). American Psychiatric Publishing, Washington, D.C.
- American Psychiatric Association Practice Guidelines, 2007. Practice Guideline for the Treatment of Patients with Substance Use Disorders. *Am J Psychiatry* 164, 1-124.
- Anderson, A.L., Li, S.H., Biswas, K., McSherry, F., Holmes, T., Iturriaga, E., Kahn, R., Chiang, N., Beresford, T., Campbell, J., Haning, W., Mawhinney, J., McCann, M., Rawson, R., Stock, C., Weis, D., Yu, E., Elkashaf, A.M., 2012. Modafinil for the treatment of methamphetamine dependence. *Drug Alcohol Depend* 120, 135-141.
- Anderson, A.L., Reid, M.S., Li, S., Holmes, T., Shemanski, L., Slee, A., Smith, E.V., Kahn, R., Chiang, N., Vocci, F., 2009. Modafinil for the treatment of cocaine dependence. *Drug Alcohol Depend* 104, 133-139.

- Anton, R.F., Moak, D.H., Latham, P.K., 1996. The obsessive compulsive drinking scale: A new method of assessing outcome in alcoholism treatment studies. *Arch Gen Psychiatry* 53, 225-231.
- Arbaizar, B., Diersen-Sotos, T., Gomez-Acebo, I., Llorca, J., 2010. Topiramate in the treatment of alcohol dependence: a meta-analysis. *Actas Esp Psiquiatr* 38, 8-12.
- Arrindell, W.A., Ettema, J.H.M., 1986. SCL-90: Handleiding bij een multidimensionele psychopathologie-indicator. Swets en Zeitlinger, Lisse.
- Baldaçara, L., Cogo-Moreira, H., Parreira, B.L., Diniz, T.A., Milhomem, J.J., Fernandes, C.C., Lacerda, A.L., 2016. Efficacy of topiramate in the treatment of crack cocaine dependence: a double-blind, randomized, placebo-controlled trial. *J Clin Psychiatry* 77, 398-406.
- Ballon, J.S., Feifel, D., 2006. A systematic review of modafinil: Potential clinical uses and mechanisms of action. *J Clin Psychiatry* 67, 554-566.
- Band, G.P., van der Molen, M.W., Logan, G.D., 2003. Horse-race model simulations of the stop-signal procedure. *Acta Psychol (Amst)* 112, 105-142.
- Bari, A., Robbins, T.W., 2013. Inhibition and impulsivity: behavioral and neural basis of response control. *Prog Neurobiol* 108, 44-79.
- Bart, G., 2012. Maintenance medication for opiate addiction: the foundation of recovery. *J Addict Dis* 31, 207-225.
- Bisagno, V., Gonzalez, B., Urbano, F.J., 2016. Cognitive enhancers versus addictive psychostimulants: The good and bad side of dopamine on prefrontal cortical circuits. *Pharmacol Res* 109, 108-118.
- Black, S.C., 2004. Cannabinoid receptor antagonists and obesity. *Curr Opin Investig Drugs* 5, 389-394.
- Blanken, P., Hendriks, V.M., Huijsman, I.A., van Ree, J.M., van den Brink, W., 2016. Efficacy of cocaine contingency management in heroin-assisted treatment: Results of a randomized controlled trial. *Drug Alcohol Depend* 164, 55-63.
- Blanken, P., Hendriks, V.M., van Ree, J.M., van den Brink, W., 2010a. Outcome of long-term heroin-assisted treatment offered to chronic, treatment-resistant heroin addicts in the Netherlands. *Addiction* 105, 300-308.
- Blanken, P., van den Brink, W., Hendriks, V.M., Huijsman, I.A., Klous, M.G., Rook, E.J., Wakelin, J.S., Barendrecht, C., Beijnen, J.H., van Ree, J.M., 2010b. Heroin-assisted treatment in the Netherlands: History, findings, and international context. *Eur Neuropsychopharmacol* 20 Suppl 2, S105-158.
- Blodgett, J.C., Del Re, A.C., Maisel, N.C., Finney, J.W., 2014. A meta-analysis of topiramate's effects for individuals with alcohol use disorders. *Alcohol Clin Exp Res* 38, 1481-1488.

- Boyd, S.T., Fremming, B.A., 2005. Rimonabant--a selective CB1 antagonist. *Ann Pharmacother* 39, 684-690.
- Brown, M.T., Bussell, J.K., 2011. Medication adherence: WHO cares? *Mayo Clin Proc* 86, 304-314.
- Canavan, S.V., Forselius, E.L., Bessette, A.J., Morgan, P.T., 2014. Preliminary evidence for normalization of risk taking by modafinil in chronic cocaine users. *Addict Behav* 39, 1057-1061.
- Carai, M.A., Colombo, G., Gessa, G.L., 2005. Rimonabant: the first therapeutically relevant cannabinoid antagonist. *Life Sci* 77, 2339-2350.
- Carpenter, K.M., Schreiber, E., Church, S., McDowell, D., 2006. Drug Stroop performance: relationships with primary substance of use and treatment outcome in a drug-dependent outpatient sample. *Addict Behav* 31, 174-181.
- Carroll, K.M., 2014. Lost in translation? Moving contingency management and cognitive behavioral therapy into clinical practice. *Ann N Y Acad Sci* 1327, 94-111.
- Carroll, K.M., Kiluk, B.D., Nich, C., DeVito, E.E., Decker, S., LaPaglia, D., Duffey, D., Babuscio, T.A., Ball, S.A., 2014. Toward empirical identification of a clinically meaningful indicator of treatment outcome: features of candidate indicators and evaluation of sensitivity to treatment effects and relationship to one year follow up cocaine use outcomes. *Drug Alcohol Depend* 137, 3-19.
- Carroll, K.M., Onken, L.S., 2005. Behavioral therapies for drug abuse. *Am J Psychiatry* 162, 1452-1460.
- Castells, X., Casas, M., Perez-Mana, C., Roncero, C., Vidal, X., Capella, D., 2010. Efficacy of psychostimulant drugs for cocaine dependence. *Cochrane Database Syst Rev*, CD007380.
- Castells, X., Casas, M., Vidal, X., Bosch, R., Roncero, C., Ramos-Quiroga, J.A., Capellà, D., 2007. Efficacy of central nervous system stimulant treatment for cocaine dependence: a systematic review and meta-analysis of randomized controlled clinical trials. *Addiction* 102, 1871-1887.
- Castells, X., Cunill, R., Perez-Mana, C., Vidal, X., Capella, D., 2016. Psychostimulant drugs for cocaine dependence. *Cochrane Database Syst Rev* 9, CD007380.
- Castells, X., Kosten, T.R., Capella, D., Vidal, X., Colom, J., Casas, M., 2009. Efficacy of opiate maintenance therapy and adjunctive interventions for opioid dependence with comorbid cocaine use disorders: A systematic review and meta-analysis of controlled clinical trials. *Am J Drug Alcohol Abuse* 35, 339-349.
- Chen, C.Y., Anthony, J.C., 2004. Epidemiological estimates of risk in the process of becoming dependent upon cocaine: cocaine hydrochloride powder versus crack cocaine. *Psychopharmacology (Berl)* 172, 78-86.

- Christensen, R., Kristensen, P.K., Bartels, E.M., Bliddal, H., Astrup, A., 2007. Efficacy and safety of the weight-loss drug rimonabant: a meta-analysis of randomised trials. *Lancet* 370, 1706-1713.
- Christiansen, P., Schoenmakers, T.M., Field, M., 2015. Less than meets the eye: Reappraising the clinical relevance of attentional bias in addiction. *Addict Behav* 44, 43-50.
- Cohen, C., Kodas, E., Griebel, G., 2005. CB1 receptor antagonists for the treatment of nicotine addiction. *Pharmacol Biochem Behav* 81, 387-395.
- Colizzi, M., Carra, E., Fraietta, S., Lally, J., Quattrone, D., Bonaccorso, S., Mondelli, V., Ajnakina, O., Dazzan, P., Trotta, A., Sideli, L., Kolliakou, A., Gaughran, F., Khondoker, M., David, A.S., Murray, R.M., MacCabe, J.H., Di Forti, M., 2016. Substance use, medication adherence and outcome one year following a first episode of psychosis. *Schizophr Res* 170, 311-317.
- Congdon, E., Mumford, J.A., Cohen, J.R., Galvan, A., Canli, T., Poldrack, R.A., 2012. Measurement and reliability of response inhibition. *Front Psychol* 3, 37.
- Corneli, A., Perry, B., Agot, K., Ahmed, K., Malamatsho, F., Van Damme, L., 2015. Facilitators of Adherence to the Study Pill in the FEM-PrEP Clinical Trial. *PLoS One* 10, e0125458.
- Coskunpinar, A., Cyders, M.A., 2013. Impulsivity and substance-related attentional bias: a meta-analytic review. *Drug Alcohol Depend* 133, 1-14.
- Cottler, L.B., 1990. The CIDI and CIDI-substance abuse module (SAM): cross-cultural instruments for assessing DSM-III, DSM-III-R and ICD-10 criteria. *NIDA Res Monogr* 105, 220-226.
- Cottler, L.B., 2000. Composite International Diagnostic Interview- Substance Abuse Module (SAM). Department of Psychiatry, Washington University School of Medicine, St. Louis, MO.
- Cox, W.M., Fadardi, J.S., Pothos, E.M., 2006. The addiction-stroop test: Theoretical considerations and procedural recommendations. *Psychol Bull* 132, 443-476.
- Crunelle, C.L., van den Brink, W., Veltman, D.J., van Emmerik-van Oortmerssen, K., Dom, G., Schoevers, R.A., Booij, J., 2013. Low dopamine transporter occupancy by methylphenidate as a possible reason for reduced treatment effectiveness in ADHD patients with cocaine dependence. *Eur Neuropsychopharmacol* 23, 1714-1723.
- Dackis, C.A., Kampman, K.M., Lynch, K.G., Pettinati, H.M., O'Brien, C.P., 2005. A Double-Blind, Placebo-Controlled Trial of Modafinil for Cocaine Dependence. *Neuropsychopharmacology* 30, 205-211.
- Dackis, C.A., Kampman, K.M., Lynch, K.G., Plebani, J.G., Pettinati, H.M., Sparkman, T., O'Brien, C.P., 2012. A double-blind, placebo-controlled trial of modafinil for cocaine dependence. *J Subst Abuse Treat* 43, 303-312.

- Dackis, C.A., Lynch, K.G., Yu, E., Samaha, F.F., Kampman, K.M., Cornish, J.W., Rowan, A., Poole, S., White, L., O'Brien, C.P., 2003. Modafinil and cocaine: a double-blind, placebo-controlled drug interaction study. *Drug Alcohol Depend* 70, 29-37.
- Darke, S., Farrell, M., 2015. Which medications are suitable for agonist drug maintenance? *Addiction* 111, 767-774.
- De Jong, R., Coles, M.G., Logan, G.D., Gratton, G., 1990. In search of the point of no return: the control of response processes. *J Exp Psychol Hum Percept Perform* 16, 164-182.
- De La Garza, R., 2nd, Zorick, T., London, E.D., Newton, T.F., 2010. Evaluation of modafinil effects on cardiovascular, subjective, and reinforcing effects of methamphetamine in methamphetamine-dependent volunteers. *Drug Alcohol Depend* 106, 173-180.
- De Sousa, A., 2010. The role of topiramate and other anticonvulsants in the treatment of alcohol dependence: a clinical review. *CNS Neurol Disord Drug Targets* 9, 45-49.
- De Wilde, E.F., Hendriks, V.M., 2005. The Client Satisfaction Questionnaire: psychometric properties in a Dutch addict population. *Eur Addict Res* 11, 157-162.
- De Wildt, W.A., Lehert, P., Schippers, G.M., Nakovics, H., Mann, K., van den Brink, W., 2005. Investigating the structure of craving using structural equation modeling in analysis of the obsessive-compulsive drinking scale: a multinational study. *Alcohol Clin Exp Res* 29, 509-516.
- De Wildt, W.A., Schippers, G.M., Van Den Brink, W., Potgieter, A.S., Deckers, F., Bets, D., 2002. Does psychosocial treatment enhance the efficacy of acamprosate in patients with alcohol problems? *Alcohol Alcohol* 37, 375-382.
- Dean, A.C., Sevak, R.J., Monterosso, J.R., Hellermann, G., Sugar, C.A., London, E.D., 2011. Acute modafinil effects on attention and inhibitory control in methamphetamine-dependent humans. *J Stud Alcohol Drugs* 72, 943-953.
- DeFulio, A., Silverman, K., 2012. The use of incentives to reinforce medication adherence. *Prev Med* 55 Suppl, S86-94.
- Degenhardt, L., Baxter, A.J., Lee, Y.Y., Hall, W., Sara, G.E., Johns, N., Flaxman, A., Whiteford, H.A., Vos, T., 2014. The global epidemiology and burden of psychostimulant dependence: findings from the Global Burden of Disease Study 2010. *Drug Alcohol Depend* 137, 36-47.
- Degenhardt, L., Hall, W., 2012. Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *Lancet* 379, 55-70.

- dela Peña, I., Gevorkiana, R., Shi, W.X., 2015. Psychostimulants affect dopamine transmission through both dopamine transporter-dependent and independent mechanisms. *Eur J Pharmacol* 764, 562-570.
- Derogatis, L.R., Lipman, R.S., Covi, L., 1973. SCL-90: an outpatient psychiatric rating scale--preliminary report. *Psychopharmacol Bull* 9, 13-28.
- Derogatis, L.R., Melisaratos, N., 1983. The Brief Symptom Inventory: an introductory report. *Psychol Med* 13, 595-605.
- Dias, N.R., Schmitz, J.M., Rathnayaka, N., Red, S.D., Sereno, A.B., Moeller, F.G., Lane, S.D., 2015. Anti-saccade error rates as a measure of attentional bias in cocaine dependent subjects. *Behav Brain Res* 292, 493-499.
- Dürsteler-MacFarland, K.M., Farronato, N.S., Strasser, J., Boss, J., Kuntze, M.F., Petitjean, S.A., Burki, C., Wiesbeck, G.A., 2013. A randomized, controlled, pilot trial of methylphenidate and cognitive-behavioral group therapy for cocaine dependence in heroin prescription. *J Clin Psychopharmacol* 33, 104-108.
- Dürsteler, K.M., Berger, E.M., Strasser, J., Caflisch, C., Mutschler, J., Herdener, M., Vogel, M., 2015. Clinical potential of methylphenidate in the treatment of cocaine addiction: a review of the current evidence. *Subst Abuse Rehabil* 6, 61-74.
- Dutra, L., Stathopoulou, G., Basden, S.L., Leyro, T.M., Powers, M.B., Otto, M.W., 2008. A meta-analytic review of psychosocial interventions for substance use disorders. *Am J Psychiatry* 165, 179-187.
- El Alili, M., Vrijens, B., Demonceau, J., Evers, S.M., Hiligsmann, M., 2016. A scoping review of studies comparing the medication event monitoring system (MEMS) with alternative methods for measuring medication adherence. *Br J Clin Pharmacol* 82, 268-279.
- Elkashef, A., Holmes, T.H., Bloch, D.A., Shoptaw, S., Kampman, K., Reid, M.S., Somoza, E., Ciraulo, D., Rotrosen, J., Leiderman, D., Montgomery, A., Voccio, F., 2005. Retrospective analyses of pooled data from CREST I and CREST II trials for treatment of cocaine dependence. *Addiction* 100 Suppl 1, 91-101.
- Elkashef, A., Kahn, R., Yu, E., Iturriaga, E., Li, S.H., Anderson, A., Chiang, N., Ait-Daoud, N., Weiss, D., McSherry, F., Serpi, T., Rawson, R., Hrymoc, M., Weis, D., McCann, M., Pham, T., Stock, C., Dickinson, R., Campbell, J., Gorodetzky, C., Haning, W., Carlton, B., Mawhinney, J., Li, M.D., Johnson, B.A., 2012. Topiramate for the treatment of methamphetamine addiction: a multi-center placebo-controlled trial. *Addiction* 107, 1297-1306.
- European Monitoring Centre for Drugs and Drug Addiction, 2012. Annual report 2012: the state of the drugs problem in Europe. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Luxembourg.

- European Monitoring Centre for Drugs and Drug Addiction, 2014. The levels of use of opioids, amphetamines and cocaine and associated levels of harm: summary of scientific evidence. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Luxembourg.
- European Monitoring Centre for Drugs and Drug Addiction, 2015. European Drug Report: Trends and Developments. European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), Luxembourg.
- Faggiano, F., Vigna-Taglianti, F., Versino, E., Lemma, P., 2003. Methadone maintenance at different dosages for opioid dependence. Cochrane Database Syst Rev, CD002208.
- Farronato, N.S., Dursteler-Macfarland, K.M., Wiesbeck, G.A., Petitjean, S.A., 2013. A systematic review comparing cognitive-behavioral therapy and contingency management for cocaine dependence. J Addict Dis 32, 274-287.
- Federici, M., Latagliata, E.C., Rizzo, F.R., Ledonne, A., Gu, H.H., Romigi, A., Nistico, R., Puglisi-Allegra, S., Mercuri, N.B., 2013. Electrophysiological and amperometric evidence that modafinil blocks the dopamine uptake transporter to induce behavioral activation. Neuroscience 252, 118-124.
- Fernandez-Serrano, M.J., Perales, J.C., Moreno-Lopez, L., Perez-Garcia, M., Verdejo-Garcia, A., 2012. Neuropsychological profiling of impulsivity and compulsivity in cocaine dependent individuals. Psychopharmacology (Berl) 219, 673-683.
- Ferri, M., Davoli, M., Perucci, C.A., 2011. Heroin maintenance for chronic heroin-dependent individuals. Cochrane Database Syst Rev, CD003410.
- Field, M., Cox, W.M., 2008. Attentional bias in addictive behaviors: a review of its development, causes, and consequences. Drug Alcohol Depend 97, 1-20.
- Field, M., Marhe, R., Franken, I.H., 2014. The clinical relevance of attentional bias in substance use disorders. CNS Spectr 19, 225-230.
- Fitzsimons, H., Tuten, M., Borsuk, C., Lookatch, S., Hanks, L., 2015. Clinician-delivered contingency management increases engagement and attendance in drug and alcohol treatment. Drug Alcohol Depend 152, 62-67.
- Frank, E., Ozon, C., Nair, V., Othee, K., 2015. Examining why patients with attention-deficit/hyperactivity disorder lack adherence to medication over the long term: a review and analysis. J Clin Psychiatry 76, e1459-1468.
- Franken, I.H., Hendriks, V.M., Stam, C.J., Van den Brink, W., 2004. A role for dopamine in the processing of drug cues in heroin dependent patients. Eur Neuropsychopharmacol 14, 503-508.
- Franken, I.H., Hendriks, V.M., van den Brink, W., 2002. Initial validation of two opiate craving questionnaires the obsessive compulsive drug use scale and the desires for drug questionnaire. Addict Behav 27, 675-685.

- Galloway, G.P., Buscemi, R., Coyle, J.R., Flower, K., Siegrist, J.D., Fiske, L.A., Baggott, M.J., Li, L., Polcin, D., Chen, C.Y., Mendelson, J., 2011. A randomized, placebo-controlled trial of sustained-release dextroamphetamine for treatment of methamphetamine addiction. *Clin Pharmacol Ther* 89, 276-282.
- Ghahremani, D.G., Tabibnia, G., Monterosso, J., Hellemann, G., Poldrack, R.A., London, E.D., 2011. Effect of modafinil on learning and task-related brain activity in methamphetamine-dependent and healthy individuals. *Neuropsychopharmacology* 36, 950-959.
- Ghitza, U.E., Preston, K.L., Epstein, D.H., Kuwabara, H., Endres, C.J., Bencherif, B., Boyd, S.J., Copersino, M.L., Frost, J.J., Gorelick, D.A., 2010. Brain mu-opioid receptor binding predicts treatment outcome in cocaine-abusing outpatients. *Biol Psychiatry* 68, 697-703.
- Gonzalez, G., Desai, R., Sofuoglu, M., Poling, J., Oliveto, A., Gonsai, K., Kosten, T.R., 2007. Clinical efficacy of gabapentin versus tiagabine for reducing cocaine use among cocaine dependent methadone-treated patients. *Drug Alcohol Depend* 87, 1-9.
- Goudriaan, A.E., Veltman, D.J., van den Brink, W., Dom, G., Schmaal, L., 2013. Neurophysiological effects of modafinil on cue-exposure in cocaine dependence: a randomized placebo-controlled cross-over study using pharmacological fMRI. *Addict Behav* 38, 1509-1517.
- Gould, R.W., Duke, A.N., Nader, M.A., 2014. PET studies in nonhuman primate models of cocaine abuse: translational research related to vulnerability and neuroadaptations. *Neuropharmacology* 84, 138-151.
- Gould, R.W., Garg, P.K., Garg, S., Nader, M.A., 2013. Effects of nicotinic acetylcholine receptor agonists on cognition in rhesus monkeys with a chronic cocaine self-administration history. *Neuropharmacology* 64, 479-488.
- Grabowski, J., Rhoades, H., Schmitz, J., Stotts, A., Daruzska, L.A., Creson, D., Moeller, F.G., 2001. Dextroamphetamine for cocaine-dependence treatment: a double-blind randomized clinical trial. *J Clin Psychopharmacol* 21, 522-526.
- Grabowski, J., Rhoades, H., Stotts, A., Cowan, K., Kopecky, C., Dougherty, A., Moeller, F., Hassan, S., Schmitz, J., 2004a. Agonist-Like or Antagonist-Like Treatment for Cocaine Dependence with Methadone for Heroin Dependence: Two Double-Blind Randomized Clinical Trials. *Neuropsychopharmacology* 29, 969-981.
- Grabowski, J., Shearer, J., Merrill, J., Stevens Negus, S., 2004b. Agonist-like, replacement pharmacotherapy for stimulant abuse and dependence. *Addictive Behaviors* 29, 1439-1464.

- Guglielmo, R., Martinotti, G., Quatrone, M., Ioime, L., Kadilli, I., Di Nicola, M., Janiri, L., 2015. Topiramate in Alcohol Use Disorders: Review and Update. *CNS Drugs* 29, 383-395.
- Hammond, C.J., Niciu, M.J., Drew, S., Arias, A.J., 2015. Anticonvulsants for the treatment of alcohol withdrawal syndrome and alcohol use disorders. *CNS Drugs* 29, 293-311.
- Hart, C.L., Haney, M., Vosburg, S.K., Rubin, E., Foltin, R.W., 2008. Smoked cocaine self-administration is decreased by modafinil. *Neuropsychopharmacology* 33, 761-768.
- Heinzerling, K.G., Swanson, A.-N., Kim, S., Cederblom, L., Moe, A., Ling, W., Shoptaw, S., 2010. Randomized, double-blind, placebo-controlled trial of modafinil for the treatment of methamphetamine dependence. *Drug Alcohol Depend* 109, 20-29.
- Hendriks, V.M., Kaplan, C.D., van Limbeek, J., Geerlings, P., 1989. The Addiction Severity Index: reliability and validity in a Dutch addict population. *J Subst Abuse Treat* 6, 133-141.
- Herin, D.V., Rush, C.R., Grabowski, J., 2010. Agonist-like pharmacotherapy for stimulant dependence: preclinical, human laboratory, and clinical studies. *Ann N Y Acad Sci* 1187, 76-100.
- Hesse, M., Vanderplaschen, W., Rapp, R.C., Broekaert, E., Fridell, M., 2007. Case management for persons with substance use disorders. *Cochrane Database Syst Rev*, CD006265.
- Hester, R., Lee, N., Pennay, A., Nielsen, S., Ferris, J., 2010. The effects of modafinil treatment on neuropsychological and attentional bias performance during 7-day inpatient withdrawal from methamphetamine dependence. *Exp Clin Psychopharmacol* 18, 489-497.
- Hjorthoj, C.R., Hjorthoj, A.R., Nordentoft, M., 2012. Validity of Timeline Follow-Back for self-reported use of cannabis and other illicit substances--systematic review and meta-analysis. *Addict Behav* 37, 225-233.
- Hollands, G.J., McDermott, M.S., Lindson-Hawley, N., Vogt, F., Farley, A., Aveyard, P., 2015. Interventions to increase adherence to medications for tobacco dependence. *Cochrane Database Syst Rev* 2, CD009164.
- Hu, Y., Salmeron, B.J., Gu, H., Stein, E.A., Yang, Y., 2015. Impaired functional connectivity within and between frontostriatal circuits and its association with compulsive drug use and trait impulsivity in cocaine addiction. *JAMA Psychiatry* 72, 584-592.
- Iglay, K., Cartier, S.E., Rosen, V.M., Zarotsky, V., Rajpathak, S.N., Radican, L., Tunceli, K., 2015. Meta-analysis of studies examining medication adherence,

- persistence, and discontinuation of oral antihyperglycemic agents in type 2 diabetes. *Curr Med Res Opin* 31, 1283-1296.
- Johnson, B.A., 2005. Recent advances in the development of treatments for alcohol and cocaine dependence: focus on topiramate and other modulators of GABA or glutamate function. *CNS Drugs* 19, 873-896.
- Johnson, B.A., Ait-Daoud, N., Bowden, C.L., DiClemente, C.C., Roache, J.D., Lawson, K., Javors, M.A., Ma, J.Z., 2003. Oral topiramate for treatment of alcohol dependence: a randomised controlled trial. *Lancet* 361, 1677-1685.
- Johnson, B.A., Ait-Daoud, N., Wang, X.Q., Penberthy, J.K., Javors, M.A., Seneviratne, C., Liu, L., 2013. Topiramate for the treatment of cocaine addiction: a randomized clinical trial. *JAMA Psychiatry* 70, 1338-1346.
- Joos, L., Goudriaan, A.E., Schmaal, L., Fransen, E., van den Brink, W., Sabbe, B.G., Dom, G., 2013a. Effect of modafinil on impulsivity and relapse in alcohol dependent patients: a randomized, placebo-controlled trial. *Eur Neuropsychopharmacol* 23, 948-955.
- Joos, L., Goudriaan, A.E., Schmaal, L., van den Brink, W., Sabbe, B.G., Dom, G., 2013b. Effect of modafinil on cognitive functions in alcohol dependent patients: a randomized, placebo-controlled trial. *J Psychopharmacol* 27, 998-1006.
- Kadden, R.M., 2001. Behavioral and cognitive-behavioral treatments for alcoholism: research opportunities. *Addict Behav* 26, 489-507.
- Kadden, R.M., Litt, M.D., Kabela-Cormier, E., Petry, N.M., 2009. Increased drinking in a trial of treatments for marijuana dependence: substance substitution? *Drug Alcohol Depend* 105, 168-171.
- Kalechstein, A.D., De La Garza, R., 2nd, Newton, T.F., 2010. Modafinil administration improves working memory in methamphetamine-dependent individuals who demonstrate baseline impairment. *Am J Addict* 19, 340-344.
- Kalechstein, A.D., Mahoney, J.J., 3rd, Yoon, J.H., Bennett, R., De la Garza, R., 2nd, 2013. Modafinil, but not escitalopram, improves working memory and sustained attention in long-term, high-dose cocaine users. *Neuropharmacology* 64, 472-478.
- Kampman, K.M., Alterman, A.I., Volpicelli, J.R., Maany, I., Muller, E.S., Luce, D.D., Mulholland, E.M., Jawad, A.F., Parikh, G.A., Mulvaney, F.D., Weinrieb, R.M., O'Brien, C.P., 2001. Cocaine withdrawal symptoms and initial urine toxicology results predict treatment attrition in outpatient cocaine dependence treatment. *Psychol Addict Behav* 15, 52-59.
- Kampman, K.M., Leiderman, D., Holmes, T., LoCastro, J., Bloch, D.A., Reid, M.S., Shoptaw, S., Montgomery, M.A., Winhusen, T.M., Somoza, E.C., Ciraulo, D.A.,

- Elkashef, A., Vocci, F., 2005. Cocaine Rapid Efficacy Screening Trials (CREST): lessons learned. *Addiction* 100 Suppl 1, 102-110.
- Kampman, K.M., Lynch, K.G., Pettinati, H.M., Spratt, K., Wierzbicki, M.R., Dackis, C., O'Brien, C.P., 2015. A double blind, placebo controlled trial of modafinil for the treatment of cocaine dependence without co-morbid alcohol dependence. *Drug Alcohol Depend* 155, 105-110.
- Kampman, K.M., Pettinati, H., Lynch, K.G., Dackis, C., Sparkman, T., Weigley, C., O'Brien, C.P., 2004. A pilot trial of topiramate for the treatment of cocaine dependence. *Drug Alcohol Depend* 75, 233-240.
- Kampman, K.M., Pettinati, H.M., Lynch, K.G., Spratt, K., Wierzbicki, M.R., O'Brien, C.P., 2013. A double-blind, placebo-controlled trial of topiramate for the treatment of comorbid cocaine and alcohol dependence. *Drug Alcohol Depend* 133, 94-99.
- Karila, L., Gorelick, D., Weinstein, A., Noble, F., Benyamina, A., Coscas, S., Blecha, L., Lowenstein, W., Martinot, J.L., Reynaud, M., Lepine, J.P., 2008. New treatments for cocaine dependence: a focused review. *Int J Neuropsychopharmacol* 11, 425-438.
- Karila, L., Petit, A., Lowenstein, W., Reynaud, M., 2012. Diagnosis and consequences of cocaine addiction. *Curr Med Chem* 19, 5612-5618.
- Kenna, G.A., Lomastro, T.L., Schiesl, A., Leggio, L., Swift, R.M., 2009. Review of topiramate: an antiepileptic for the treatment of alcohol dependence. *Curr Drug Abuse Rev* 2, 135-142.
- Keshavan, M.S., Vinogradov, S., Rumsey, J., Sherrill, J., Wagner, A., 2014. Cognitive training in mental disorders: update and future directions. *Am J Psychiatry* 171, 510-522.
- Kim, J.H., Lawrence, A.J., 2014. Drugs currently in Phase II clinical trials for cocaine addiction. *Expert Opin Investig Drugs* 23, 1105-1122.
- Kishi, T., Matsuda, Y., Iwata, N., Correll, C.U., 2013. Antipsychotics for cocaine or psychostimulant dependence: systematic review and meta-analysis of randomized, placebo-controlled trials. *J Clin Psychiatry* 74, e1169-1180.
- Knapp, W.P., Soares, B.G., Farrel, M., Lima, M.S., 2007. Psychosocial interventions for cocaine and psychostimulant amphetamines related disorders. *Cochrane Database Syst Rev*, CD003023.
- Kokkevi, A., Hartgers, C., 1995. EuropASI: European adaptation of a multidimensional assessment instrument for drug and alcohol dependence. *European Addiction Research* 1, 208-210.
- Konova, A.B., Moeller, S.J., Tomasi, D., Volkow, N.D., Goldstein, R.Z., 2013. Effects of methylphenidate on resting-state functional connectivity of the

- mesocorticolimbic dopamine pathways in cocaine addiction. *JAMA Psychiatry* 70, 857-868.
- Konstenius, M., Jayaram-Lindstrom, N., Guterstam, J., Beck, O., Philips, B., Franck, J., 2014. Methylphenidate for attention deficit hyperactivity disorder and drug relapse in criminal offenders with substance dependence: a 24-week randomized placebo-controlled trial. *Addiction* 109, 440-449.
- Kosten, T., Domingo, C., Orson, F., Kinsey, B., 2013. Vaccines against stimulants: cocaine and MA. *Br J Clin Pharmacol* 77, 368-374.
- Kourounis, G., Richards, B.D., Kyprianou, E., Symeonidou, E., Malliori, M.M., Samartzis, L., 2016. Opioid substitution therapy: Lowering the treatment thresholds. *Drug Alcohol Depend* 161, 1-8.
- Krousel-Wood, M., Thomas, S., Muntner, P., Morisky, D., 2004. Medication adherence: a key factor in achieving blood pressure control and good clinical outcomes in hypertensive patients. *Curr Opin Cardiol* 19, 357-362.
- Kumar, R., 2008. Approved and investigational uses of modafinil : an evidence-based review. *Drugs* 68, 1803-1839.
- Kunøe, N., Lobmaier, P., Ngo, H., Hulse, G., 2014. Injectable and implantable sustained release naltrexone in the treatment of opioid addiction. *Br J Clin Pharmacol* 77, 264-271.
- Larney, S., Gowing, L., Mattick, R.P., Farrell, M., Hall, W., Degenhardt, L., 2014. A systematic review and meta-analysis of naltrexone implants for the treatment of opioid dependence. *Drug Alcohol Rev* 33, 115-128.
- Larsen, D.L., Attkisson, C.C., Hargreaves, W.A., Nguyen, T.D., 1979. Assessment of client/patient satisfaction: development of a general scale. *Eval Program Plann* 2, 197-207.
- Le Foll, B., Goldberg, S.R., 2005. Cannabinoid CB1 receptor antagonists as promising new medications for drug dependence. *J Pharmacol Exp Ther* 312, 875-883.
- Ledgerwood, D.M., Petry, N.M., 2006. Does contingency management affect motivation to change substance use? *Drug Alcohol Depend* 83, 65-72.
- Lee, N., Pennay, A., Hester, R., McKitin, R., Nielsen, S., Ferris, J., 2013. A pilot randomised controlled trial of modafinil during acute methamphetamine withdrawal: feasibility, tolerability and clinical outcomes. *Drug Alcohol Rev* 32, 88-95.
- Leeman, R.F., Robinson, C.D., Waters, A.J., Sofuoglu, M., 2014. A critical review of the literature on attentional bias in cocaine use disorder and suggestions for future research. *Exp Clin Psychopharmacol* 22, 469-483.
- Leiderman, D.B., Shoptaw, S., Montgomery, A., Bloch, D.A., Elkashaf, A., LoCastro, J., Voccio, F., 2005. Cocaine Rapid Efficacy Screening Trial (CREST): a paradigm

- for the controlled evaluation of candidate medications for cocaine dependence. *Addiction* 100 Suppl 1, 1-11.
- Leucht, S., Hierl, S., Kissling, W., Dold, M., Davis, J.M., 2012. Putting the efficacy of psychiatric and general medicine medication into perspective: review of meta-analyses. *Br J Psychiatry* 200, 97-106.
- Levin, F.R., Mariani, J.J., Specker, S., Mooney, M., Mahony, A., Brooks, D.J., Babb, D., Bai, Y., Eberly, L.E., Nunes, E.V., Grabowski, J., 2015. Extended-Release Mixed Amphetamine Salts vs Placebo for Comorbid Adult Attention-Deficit/Hyperactivity Disorder and Cocaine Use Disorder: A Randomized Clinical Trial. *JAMA Psychiatry* 72, 593-602.
- Ling, W., Casadonte, P., Bigelow, G., Kampman, K.M., Patkar, A., Bailey, G.L., Rosenthal, R.N., Beebe, K.L., 2010. Buprenorphine implants for treatment of opioid dependence: a randomized controlled trial. *JAMA* 304, 1576-1583.
- Lingford-Hughes, A., Welch, S., Peters, L., Nutt, D., 2012. BAP updated guidelines: evidence-based guidelines for the pharmacological management of substance abuse, harmful use, addiction and comorbidity: recommendations from BAP. *J Psychopharmacol* 26, 899-952.
- Liu, S., Lane, S.D., Schmitz, J.M., Waters, A.J., Cunningham, K.A., Moeller, F.G., 2011. Relationship between attentional bias to cocaine-related stimuli and impulsivity in cocaine-dependent subjects. *Am J Drug Alcohol Abuse* 37, 117-122.
- Logan, G.D., Cowan, W.B., Davis, K.A., 1984. On the ability to inhibit simple and choice reaction time responses: a model and a method. *J Exp Psychol Hum Percept Perform* 10, 276-291.
- Longo, M., Wickes, W., Smout, M., Harrison, S., Cahill, S., White, J.M., 2010. Randomized controlled trial of dexamphetamine maintenance for the treatment of methamphetamine dependence. *Addiction* 105, 146-154.
- Lopez-Quintero, C., Perez de los Cobos, J., Hasin, D.S., Okuda, M., Wang, S., Grant, B.F., Blanco, C., 2011. Probability and predictors of transition from first use to dependence on nicotine, alcohol, cannabis, and cocaine: results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *Drug Alcohol Depend* 115, 120-130.
- Loree, A.M., Lundahl, L.H., Ledgerwood, D.M., 2014. Impulsivity as a predictor of treatment outcome in substance use disorders: Review and synthesis. *Drug Alcohol Rev* 34, 119-134.
- Lussier, J.P., Heil, S.H., Mongeon, J.A., Badger, G.J., Higgins, S.T., 2006. A meta-analysis of voucher-based reinforcement therapy for substance use disorders. *Addiction* 101, 192-203.

- Madoz-Gurpide, A., Blasco-Fontecilla, H., Baca-Garcia, E., Ochoa-Mangado, E., 2011. Executive dysfunction in chronic cocaine users: an exploratory study. *Drug Alcohol Depend* 117, 55-58.
- Maisel, N.C., Blodgett, J.C., Wilbourne, P.L., Humphreys, K., Finney, J.W., 2013. Meta-analysis of naltrexone and acamprosate for treating alcohol use disorders: when are these medications most helpful? *Addiction* 108, 275-293.
- Malcolm, R., Swayngim, K., Donovan, J.L., DeVane, C.L., Elkashef, A., Chiang, N., Khan, R., Mojsiak, J., Myrick, D.L., Hedden, S., Cochran, K., Woolson, R.F., 2006. Modafinil and cocaine interactions. *Am J Drug Alcohol Abuse* 32, 577-587.
- Mancino, M.J., McGaugh, J., Chopra, M.P., Guise, J.B., Cargile, C., Williams, D.K., Thostenson, J., Kosten, T.R., Sanders, N., Oliveto, A., 2014. Clinical efficacy of sertraline alone and augmented with gabapentin in recently abstinent cocaine-dependent patients with depressive symptoms. *J Clin Psychopharmacol* 34, 234-239.
- Mariani, J.J., Levin, F.R., 2012. Psychostimulant treatment of cocaine dependence. *Psychiatr Clin North Am* 35, 425-439.
- Mariani, J.J., Pavlicova, M., Bisaga, A., Nunes, E.V., Brooks, D.J., Levin, F.R., 2012. Extended-release mixed amphetamine salts and topiramate for cocaine dependence: a randomized controlled trial. *Biol Psychiatry* 72, 950-956.
- Marks, K.R., Pike, E., Stoops, W.W., Rush, C.R., 2014a. Test-retest reliability of eye tracking during the visual probe task in cocaine-using adults. *Drug Alcohol Depend* 145, 235-237.
- Marks, K.R., Roberts, W., Stoops, W.W., Pike, E., Fillmore, M.T., Rush, C.R., 2014b. Fixation time is a sensitive measure of cocaine cue attentional bias. *Addiction* 109, 1501-1508.
- Marlatt, G.A., 1996. Harm reduction: come as you are. *Addict Behav* 21, 779-788.
- Marsden, J., Eastwood, B., Bradbury, C., Dale-Perera, A., Farrell, M., Hammond, P., Knight, J., Randhawa, K., Wright, C., National Drug Treatment Monitoring System Outcomes Study, G., 2009. Effectiveness of community treatments for heroin and crack cocaine addiction in England: a prospective, in-treatment cohort study. *Lancet* 374, 1262-1270.
- Marsden, J., Gossop, M., Stewart, D., Best, D., Farrell, M., Lehmann, P., Edwards, C., Strang, J., 1998. The Maudsley Addiction Profile (MAP): a brief instrument for assessing treatment outcome. *Addiction* 93, 1857-1867.
- Marteau, T.M., Ashcroft, R.E., Oliver, A., 2009. Using financial incentives to achieve healthy behaviour. *BMJ* 338, b1415.
- Martinez-Raga, J., Knecht, C., Cepeda, S., 2008. Modafinil: a useful medication for cocaine addiction? Review of the evidence from neuropharmacological, experimental and clinical studies. *Curr Drug Abuse Rev* 1, 213-221.

- McElhiney, M.C., Rabkin, J.G., Rabkin, R., Nunes, E.V., 2009. Provigil (modafinil) plus cognitive behavioral therapy for methamphetamine use in HIV+ gay men: a pilot study. *Am J Drug Alcohol Abuse* 35, 34-37.
- McLellan, A.T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., Pettinati, H., Argeriou, M., 1992. The Fifth Edition of the Addiction Severity Index. *J Subst Abuse Treat* 9, 199-213.
- Means, L.B., Small, M., Capone, D.M., Capone, T.J., Condren, R., Peterson, M., Hayward, B., 1989. Client demographics and outcome in outpatient cocaine treatment. *Int J Addict* 24, 765-783.
- Mereu, M., Bonci, A., Newman, A.H., Tanda, G., 2013. The neurobiology of modafinil as an enhancer of cognitive performance and a potential treatment for substance use disorders. *Psychopharmacology (Berl)* 229, 415-434.
- Miguel, A.Q., Madruga, C.S., Cogo-Moreira, H., Yamauchi, R., Simoes, V., da Silva, C.J., McPherson, S., Roll, J.M., Laranjeira, R.R., 2016. Contingency Management Is Effective in Promoting Abstinence and Retention in Treatment Among Crack Cocaine Users in Brazil: A Randomized Controlled Trial. *Psychol Addict Behav* 30, 536-543.
- Minozzi, S., Amato, L., Davoli, M., Farrell, M., Lima Reisser, A.A., Pani, P.P., Silva de Lima, M., Soares, B., Vecchi, S., 2008. Anticonvulsants for cocaine dependence. *Cochrane Database Syst Rev*, CD006754.
- Minozzi, S., Amato, L., Pani, P.P., Solimini, R., Vecchi, S., De Crescenzo, F., Zuccaro, P., Davoli, M., 2015a. Dopamine agonists for the treatment of cocaine dependence. *Cochrane Database Syst Rev* 5, CD003352.
- Minozzi, S., Cinquini, M., Amato, L., Davoli, M., Farrell, M.F., Pani, P.P., Vecchi, S., 2015b. Anticonvulsants for cocaine dependence. *Cochrane Database Syst Rev* 4, CD006754.
- Minzenberg, M.J., Carter, C.S., 2008. Modafinil: a review of neurochemical actions and effects on cognition. *Neuropsychopharmacology* 33, 1477-1502.
- Moeller, S.J., Honorio, J., Tomasi, D., Parvaz, M.A., Woicik, P.A., Volkow, N.D., Goldstein, R.Z., 2014. Methylphenidate enhances executive function and optimizes prefrontal function in both health and cocaine addiction. *Cereb Cortex* 24, 643-653.
- Monti, P.M., Rohsenow, D.J., Michalec, E., Martin, R.A., Abrams, D.B., 1997. Brief coping skills treatment for cocaine abuse: substance use outcomes at three months. *Addiction* 92, 1717-1728.
- Mooney, M., Sayre, S., Green, C., Rhoades, H., Schmitz, J., 2004. Comparing Measures of Medication Taking in a Pharmacotherapy Trial for Cocaine Dependence. *Addict Disord Their Treat* 3, 165-173.

- Mooney, M.E., Herin, D.V., Schmitz, J.M., Moukaddam, N., Green, C.E., Grabowski, J., 2009. Effects of oral methamphetamine on cocaine use: a randomized, double-blind, placebo-controlled trial. *Drug Alcohol Depend* 101, 34-41.
- Mooney, M.E., Herin, D.V., Specker, S., Babb, D., Levin, F.R., Grabowski, J., 2015. Pilot study of the effects of lisdexamfetamine on cocaine use: A randomized, double-blind, placebo-controlled trial. *Drug Alcohol Depend* 153, 94-103.
- Morgan, P.T., Angarita, G.A., Canavan, S., Pittman, B., Oberleitner, L., Malison, R.T., Mohsenin, V., Hodges, S., Easton, C., McKee, S., Bessette, A., Forselius, E., 2016. Modafinil and sleep architecture in an inpatient-outpatient treatment study of cocaine dependence. *Drug Alcohol Depend* 160, 49-56.
- Nigg, J.T., 2000. On inhibition/disinhibition in developmental psychopathology: views from cognitive and personality psychology and a working inhibition taxonomy. *Psychol Bull* 126, 220-246.
- Nuijten, M., Blanken, P., van de Wetering, B., Nuijen, B., van den Brink, W., Hendriks, V.M., 2016a. Sustained-release dexamfetamine in the treatment of chronic cocaine-dependent patients on heroin-assisted treatment: a randomised, double-blind, placebo-controlled trial. *Lancet* 387, 2226-2234.
- Nuijten, M., Blanken, P., Van den Brink, W., Goudriaan, A.E., Hendriks, V.M., 2016b. Impulsivity and attentional bias as predictors of modafinil treatment outcome for retention and drug use in crack-cocaine dependent patients: Results of a randomised controlled trial. *J Psychopharmacol* 30, 616-626.
- Nuijten, M., Blanken, P., van den Brink, W., Hendriks, V., 2011. Cocaine Addiction Treatments to improve Control and reduce Harm (CATCH): New Pharmacological Treatment Options for Crack-Cocaine Dependence in the Netherlands. *BMC Psychiatry* 11, 135.
- Nuijten, M., Blanken, P., van den Brink, W., Hendriks, V., 2014. Treatment of crack-cocaine dependence with topiramate: A randomized controlled feasibility trial in The Netherlands. *Drug Alcohol Depend* 138, 177-184.
- Nuijten, M., Blanken, P., van den Brink, W., Hendriks, V., 2015. Modafinil in the treatment of crack-cocaine dependence in the Netherlands: Results of an open-label randomised controlled feasibility trial. *J Psychopharmacol* 29, 678-687.
- O'Brien, M.S., Anthony, J.C., 2005. Risk of becoming cocaine dependent: epidemiological estimates for the United States, 2000-2001. *Neuropsychopharmacology* 30, 1006-1018.
- Oliveto, A., Poling, J., Mancino, M.J., Williams, D.K., Thostenson, J., Pruzinsky, R., Gonsai, K., Sofuooglu, M., Gonzalez, G., Tripathi, S., Kosten, T.R., 2012. Sertraline delays relapse in recently abstinent cocaine-dependent patients with depressive symptoms. *Addiction* 107, 131-141.

- Osterberg, L., Blaschke, T., 2005. Adherence to medication. *N Engl J Med* 353, 487-497.
- Oteo Perez, A., Benschop, A., Blanken, P., Korf, D.J., 2015. Criminal involvement and crime specialization among crack users in the Netherlands. *Eur Addict Res* 21, 53-62.
- Oteo Perez, A., Benschop, A., Korf, D.J., 2012. Differential profiles of crack users in respondent-driven and institutional samples: a three-site comparison. *Eur Addict Res* 18, 184-192.
- Oteo Perez, A., Cruyff, M.J., Benschop, A., Korf, D.J., 2013. Estimating the prevalence of crack dependence using capture-recapture with institutional and field data: a three-city study in The Netherlands. *Subst Use Misuse* 48, 173-180.
- Pani, P.P., Trogu, E., Vecchi, S., Amato, L., 2011. Antidepressants for cocaine dependence and problematic cocaine use. *Cochrane Database Syst Rev*, CD002950.
- Patton, J.H., Stanford, M.S., Barratt, E.S., 1995. Factor structure of the Barratt impulsiveness scale. *J Clin Psychol* 51, 768-774.
- Perez-Mana, C., Castells, X., Torrens, M., Capella, D., Farre, M., 2013. Efficacy of psychostimulant drugs for amphetamine abuse or dependence. *Cochrane Database Syst Rev* 9, CD009695.
- Perez-Mana, C., Castells, X., Vidal, X., Casas, M., Capella, D., 2011. Efficacy of indirect dopamine agonists for psychostimulant dependence: A systematic review and meta-analysis of randomized controlled trials. *J Subst Abuse Treat* 40, 109-122.
- Petitjean, S.A., Dursteler-MacFarland, K.M., Krokar, M.C., Strasser, J., Mueller, S.E., Degen, B., Trombini, M.V., Vogel, M., Walter, M., Wiesbeck, G.A., Farronato, N.S., 2014. A randomized, controlled trial of combined cognitive-behavioral therapy plus prize-based contingency management for cocaine dependence. *Drug Alcohol Depend* 145, 94-100.
- Petry, N.M., 2010. Contingency management treatments: controversies and challenges. *Addiction* 105, 1507-1509.
- Petry, N.M., Rash, C.J., Byrne, S., Ashraf, S., White, W.B., 2012. Financial reinforcers for improving medication adherence: findings from a meta-analysis. *Am J Med* 125, 888-896.
- Poling, J., Kosten, T.R., Sofuoglu, M., 2007. Treatment outcome predictors for cocaine dependence. *Am J Drug Alcohol Abuse* 33, 191-206.
- Pomara, C., Cassano, T., D'Errico, S., Bello, S., Romano, A.D., Riezzo, I., Serviddio, G., 2012. Data available on the extent of cocaine use and dependence:

- biochemistry, pharmacologic effects and global burden of disease of cocaine abusers. *Curr Med Chem* 19, 5647-5657.
- Potvin, S., Stavro, K., Rizkallah, E., Pelletier, J., 2014. Cocaine and cognition: a systematic quantitative review. *J Addict Med* 8, 368-376.
- Prendergast, M., Podus, D., Finney, J., Greenwell, L., Roll, J., 2006. Contingency management for treatment of substance use disorders: a meta-analysis. *Addiction* 101, 1546-1560.
- Preston, K.L., Umbricht, A., Wong, C.J., Epstein, D.H., 2001. Shaping cocaine abstinence by successive approximation. *J Consult Clin Psychol* 69, 643-654.
- Preti, A., 2007. New developments in the pharmacotherapy of cocaine abuse. *Addict Biol* 12, 133-151.
- Project MATCH Research Group, 1993. Project MATCH (Matching Alcoholism Treatment to Client Heterogeneity): rationale and methods for a multisite clinical trial matching patients to alcoholism treatment. *Alcohol Clin Exp Res* 17, 1130-1145.
- Ratcliff, R., 1993. Methods for dealing with reaction time outliers. *Psychol Bull* 114, 510-532.
- Reboussin, B.A., Anthony, J.C., 2006. Is there epidemiological evidence to support the idea that a cocaine dependence syndrome emerges soon after onset of cocaine use? *Neuropsychopharmacology* 31, 2055-2064.
- Rehm, J., Gschwend, P., Steffen, T., Gutzwiller, F., Dobler-Mikola, A., Uchtenhagen, A., 2001. Feasibility, safety, and efficacy of injectable heroin prescription for refractory opioid addicts: a follow-up study. *Lancet* 358, 1417-1423.
- Reis, A.D., Castro, L.A., Faria, R., Laranjeira, R., 2008. Craving decrease with topiramate in outpatient treatment for cocaine dependence: an open label trial. *Rev Bras Psiquiatr* 30, 132-135.
- Rezaei, F., Ghaderi, E., Mardani, R., Hamidi, S., Hassanzadeh, K., 2016. Topiramate for the management of methamphetamine dependence: a pilot randomized, double-blind, placebo-controlled trial. *Fundam Clin Pharmacol*.
- Rohsenow, D.J., Monti, P.M., Martin, R.A., Michalec, E., Abrams, D.B., 2000. Brief coping skills treatment for cocaine abuse: 12-month substance use outcomes. *J Consult Clin Psychol* 68, 515-520.
- Rosenthal, R.N., Ling, W., Casadonte, P., Voccio, F., Bailey, G.L., Kampman, K., Patkar, A., Chavouostie, S., Blasey, C., Sigmon, S., Beebe, K.L., 2013. Buprenorphine implants for treatment of opioid dependence: randomized comparison to placebo and sublingual buprenorphine/naloxone. *Addiction* 108, 2141-2149.

- Rosenthal, R.N., Lofwall, M.R., Kim, S., Chen, M., Beebe, K.L., Vocci, F.J., for the PRO-814 Study Group, 2016. Effect of Buprenorphine Implants on Illicit Opioid Use Among Abstinent Adults With Opioid Dependence Treated With Sublingual Buprenorphine: A Randomized Clinical Trial. *JAMA* 316, 282-290.
- Rush, C.R., Stoops, W.W., 2012. Agonist replacement therapy for cocaine dependence: a translational review. *Future Med Chem* 4, 245-265.
- Salamina, G., Diecidue, R., Vigna-Taglianti, F., Jarre, P., Schifano, P., Bargagli, A.M., Davoli, M., Amato, L., Perucci, C.A., Faggiano, F., Group, V.E.S., 2010. Effectiveness of therapies for heroin addiction in retaining patients in treatment: results from the VEdeTTE study. *Subst Use Misuse* 45, 2076-2092.
- Sansone, R.A., Sansone, L.A., 2012. Antidepressant adherence: are patients taking their medications? *Innov Clin Neurosci* 9, 41-46.
- Schellings, R., Kessels, A.G., ter Riet, G., Sturmans, F., 1999. The Zelen design may be the best choice for a heroin-provision experiment. *J Clin Epidemiol* 52, 503-507.
- Schierenberg, A., van Amsterdam, J., van den Brink, W., Goudriaan, A.E., 2012. Efficacy of contingency management for cocaine dependence treatment: a review of the evidence. *Curr Drug Abuse Rev* 5, 320-331.
- Schmaal, L., Goudriaan, A.E., Joos, L., Dom, G., Pattij, T., van den Brink, W., Veltman, D.J., 2014. Neural substrates of impulsive decision making modulated by modafinil in alcohol-dependent patients. *Psychol Med* 44, 2787-2798.
- Schmaal, L., Goudriaan, A.E., Joos, L., Kruse, A.M., Dom, G., van den Brink, W., Veltman, D.J., 2013a. Modafinil modulates resting-state functional network connectivity and cognitive control in alcohol-dependent patients. *Biol Psychiatry* 73, 789-795.
- Schmaal, L., Joos, L., Koelman, M., Veltman, D.J., van den Brink, W., Goudriaan, A.E., 2013b. Effects of modafinil on neural correlates of response inhibition in alcohol-dependent patients. *Biol Psychiatry* 73, 211-218.
- Schmitz, J.M., Green, C.E., Stotts, A.L., Lindsay, J.A., Rathnayaka, N.S., Grabowski, J., Moeller, F.G., 2014. A two-phased screening paradigm for evaluating candidate medications for cocaine cessation or relapse prevention: modafinil, levodopa-carbidopa, naltrexone. *Drug Alcohol Depend* 136, 100-107.
- Schmitz, J.M., Rathnayaka, N., Green, C.E., Moeller, F.G., Dougherty, A.E., Grabowski, J., 2012. Combination of Modafinil and d-amphetamine for the Treatment of Cocaine Dependence: A Preliminary Investigation. *Front Psychiatry* 3, 77.
- Schulte, M.H., Cousijn, J., den Uyl, T.E., Goudriaan, A.E., van den Brink, W., Veltman, D.J., Schilt, T., Wiers, R.W., 2014. Recovery of neurocognitive

- functions following sustained abstinence after substance dependence and implications for treatment. *Clin Psychol Rev* 34, 531-550.
- Servick, K., 2014. Biomedicine. 'Nonadherence': a bitter pill for drug trials. *Science* 346, 288-289.
- Shearer, J., 2007. Psychosocial approaches to psychostimulant dependence: a systematic review. *J Subst Abuse Treat* 32, 41-52.
- Shearer, J., 2008. The principles of agonist pharmacotherapy for psychostimulant dependence. *Drug Alcohol Rev* 27, 301-308.
- Shearer, J., Darke, S., Rodgers, C., Slade, T., van Beek, I., Lewis, J., Brady, D., McKitin, R., Mattick, R.P., Wodak, A., 2009. A double-blind, placebo-controlled trial of modafinil (200 mg/day) for methamphetamine dependence. *Addiction* 104, 224-233.
- Shearer, J., Gowing, L., 2004. Pharmacotherapies for problematic psychostimulant use: a review of current research. *Drug Alcohol Rev* 23, 203-211.
- Shearer, J., Wodak, A., Mattick, R.P., Van Beek, I., Lewis, J., Hall, W., Dolan, K., 2001. Pilot randomized controlled study of dexamphetamine substitution for amphetamine dependence. *Addiction* 96, 1289-1296.
- Shearer, J., Wodak, A., van Beek, I., Mattick, R.P., Lewis, J., 2003. Pilot randomized double blind placebo-controlled study of dexamphetamine for cocaine dependence. *Addiction* 98, 1137-1141.
- Sheehan, D.V., Lecrubier, Y., Sheehan, K.H., Amorim, P., Janavs, J., Weiller, E., Hergueta, T., Baker, R., Dunbar, G.C., 1998. The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 59 Suppl 20, 22-33;quiz 34-57.
- Shinn, A.K., Greenfield, S.F., 2010. Topiramate in the treatment of substance-related disorders: a critical review of the literature. *J Clin Psychiatry* 71, 634-648.
- Shram, M.J., Cohen-Barak, O., Chakraborty, B., Bassan, M., Schoedel, K.A., Hallak, H., Eyal, E., Weiss, S., Gilgun, Y., Sellers, E.M., Faulknor, J., Spiegelstein, O., 2015. Assessment of Pharmacokinetic and Pharmacodynamic Interactions Between Albumin-Fused Mutated Butyrylcholinesterase and Intravenously Administered Cocaine in Recreational Cocaine Users. *J Clin Psychopharmacol* 35, 396-405.
- Singh, M., Keer, D., Klimas, J., Wood, E., Werb, D., 2016. Topiramate for Cocaine Dependence: A Systematic Review and Meta-Analysis of Randomized Control Trials. *Addiction* 111, 1337-1346.

- Sinha, R., Garcia, M., Paliwal, P., Kreek, M.J., Rounsaville, B.J., 2006. Stress-induced cocaine craving and hypothalamic-pituitary-adrenal responses are predictive of cocaine relapse outcomes. *Arch Gen Psychiatry* 63, 324-331.
- Smart, K., Desmond, R.C., Poulos, C.X., Zack, M., 2013. Modafinil increases reward salience in a slot machine game in low and high impulsivity pathological gamblers. *Neuropharmacology* 73, 66-74.
- Sobell, L.C., Sobell, M.B., 1992. Timeline Follow-back: A technique for assessing self-reported alcohol consumption. In: Litten, R.Z., Allen, J.P. (Eds.), *Measuring alcohol consumption: Psychosocial and biological methods*. Humana Press, Towota, NJ. pp. 41-72.
- Sofuoğlu, M., 2010. Cognitive enhancement as a pharmacotherapy target for stimulant addiction. *Addiction* 105, 38-48.
- Sofuoğlu, M., DeVito, E.E., Waters, A.J., Carroll, K.M., 2013. Cognitive enhancement as a treatment for drug addictions. *Neuropharmacology* 64, 452-463.
- Sofuoğlu, M., Gonzalez, G., Poling, J., Kosten, T.R., 2003. Prediction of treatment outcome by baseline urine cocaine results and self-reported cocaine use for cocaine and opioid dependence. *Am J Drug Alcohol Abuse* 29, 713-727.
- Spronk, D.B., van Wel, J.H., Ramaekers, J.G., Verkes, R.J., 2013. Characterizing the cognitive effects of cocaine: a comprehensive review. *Neurosci Biobehav Rev* 37, 1838-1859.
- Starosta, A.N., Leeman, R.F., Volpicelli, J.R., 2006. The BRENDA model: integrating psychosocial treatment and pharmacotherapy for the treatment of alcohol use disorders. *J Psychiatr Pract* 12, 80-89.
- Steinberg, M.B., Foulds, J., 2007. Rimonabant for treating tobacco dependence. *Vasc Health Risk Manag* 3, 307-311.
- Stevens, L., Verdejo-Garcia, A., Goudriaan, A.E., Roeyers, H., Dom, G., Vanderplasschen, W., 2014. Impulsivity as a vulnerability factor for poor addiction treatment outcomes: a review of neurocognitive findings among individuals with substance use disorders. *J Subst Abuse Treat* 47, 58-72.
- Stitzer, M.L., Vandrey, R., 2008. Contingency management: utility in the treatment of drug abuse disorders. *Clin Pharmacol Ther* 83, 644-647.
- Stoops, W.W., Rush, C.R., 2013. Agonist replacement for stimulant dependence: a review of clinical research. *Curr Pharm Des* 19, 7026-7035.
- Stout, R.L., Braciszewski, J.M., Subbaraman, M.S., Kranzler, H.R., O'Malley, S.S., Falk, D., group, A., 2014. What happens when people discontinue taking medications? Lessons from COMBINE. *Addiction* 109, 2044-2052.
- Stroop, J.R., 1935. Studies of interference in serial verbal reactions. *Journal of Experimental Psychology* 18, 643-662.

- Topol, E.J., Bousser, M.G., Fox, K.A., Creager, M.A., Despres, J.P., Easton, J.D., Hamm, C.W., Montalescot, G., Steg, P.G., Pearson, T.A., Cohen, E., Gaudin, C., Job, B., Murphy, J.H., Bhatt, D.L., Investigators, C., 2010. Rimonabant for prevention of cardiovascular events (CRESCENDO): a randomised, multicentre, placebo-controlled trial. *Lancet* 376, 517-523.
- Torgerson, D.J., Roland, M., 1998. What is Zelen's design? *BMJ* 316, 606.
- Trimbos-instituut, 2012. Nationale drugmonitor - Jaarbericht 2011. Trimbos-instituut, Utrecht.
- Trimbos-instituut, 2013. Nationale drugmonitor - Jaarbericht 2012. Trimbos-instituut, Utrecht.
- Trimbos-instituut, 2015. Nationale drugmonitor - Jaarbericht 2015. Trimbos-instituut, Utrecht.
- Umbrecht, A., DeFulio, A., Winstanley, E.L., Tompkins, D.A., Peirce, J., Mintzer, M.Z., Strain, E.C., Bigelow, G.E., 2014. Topiramate for cocaine dependence during methadone maintenance treatment: a randomized controlled trial. *Drug Alcohol Depend* 140, 92-100.
- United Nations Office on Drugs and Crime, 2012. World Drug Report 2012. United Nations Office on Drugs and Crime (UNODC), Vienna (Austria).
- United Nations Office on Drugs and Crime, 2015. World Drug Report 2015. United Nations Office on Drugs and Crime (UNODC), Vienna (Austria).
- Van den Brink, W., 2012. Evidence-based pharmacological treatment of substance use disorders and pathological gambling. *Curr Drug Abuse Rev* 5, 3-31.
- Van den Brink, W., Hendriks, V.M., Blanken, P., Koeter, M.W., van Zwieten, B.J., van Ree, J.M., 2003. Medical prescription of heroin to treatment resistant heroin addicts: two randomised controlled trials. *BMJ* 327, 310.
- Van Horn, D.H., Drapkin, M., Ivey, M., Thomas, T., Domis, S.W., Abdalla, O., Herd, D., McKay, J.R., 2011. Voucher incentives increase treatment participation in telephone-based continuing care for cocaine dependence. *Drug Alcohol Depend* 114, 225-228.
- Velazquez-Sanchez, C., Ferragud, A., Ramos-Miguel, A., Garcia-Sevilla, J.A., Canales, J.J., 2013. Substituting a long-acting dopamine uptake inhibitor for cocaine prevents relapse to cocaine seeking. *Addict Biol* 18, 633-643.
- Verbruggen, F., Logan, G.D., 2008a. Automatic and controlled response inhibition: associative learning in the go/no-go and stop-signal paradigms. *J Exp Psychol Gen* 137, 649-672.
- Verbruggen, F., Logan, G.D., 2008b. Response inhibition in the stop-signal paradigm. *Trends Cogn Sci* 12, 418-424.
- Verdejo-Garcia, A., Betanzos-Espinosa, P., Lozano, O.M., Vergara-Moragues, E., Gonzalez-Saiz, F., Fernandez-Calderon, F., Bilbao-Acedos, I., Perez-Garcia, M.,

2012. Self-regulation and treatment retention in cocaine dependent individuals: A longitudinal study. *Drug Alcohol Depend* 122, 142-148.
- Verrico, C.D., Haile, C.N., Mahoney Iii, J.J., Thompson-Lake, D.G., Newton, T.F., Ii, R.D., 2014. Treatment with modafinil and escitalopram, alone and in combination, on cocaine-induced effects: A randomized, double blind, placebo-controlled human laboratory study. *Drug Alcohol Depend* 141C, 72-78.
- Vocci, F., 2012. Commentary on Elkashef et al. (2012): Just enough efficacy for a second look. *Addiction* 107, 1307-1308.
- Vocci, F.J., 2008. Cognitive remediation in the treatment of stimulant abuse disorders: a research agenda. *Exp Clin Psychopharmacol* 16, 484-497.
- Vocci, F.J., Montoya, I.D., 2009. Psychological treatments for stimulant misuse, comparing and contrasting those for amphetamine dependence and those for cocaine dependence. *Curr Opin Psychiatry* 22, 263-268.
- Volkow, N.D., Fowler, J.S., Logan, J., Alexoff, D., Zhu, W., Telang, F., Wang, G.J., Jayne, M., Hooker, J.M., Wong, C., Hubbard, B., Carter, P., Warner, D., King, P., Shea, C., Xu, Y., Muench, L., Apelskog-Torres, K., 2009. Effects of Modafinil on Dopamine and Dopamine Transporters in the Male Human Brain: Clinical Implications. *JAMA: The Journal of the American Medical Association* 301, 1148-1154.
- Volkow, N.D., Wang, G.J., Tomasi, D., Telang, F., Fowler, J.S., Pradhan, K., Jayne, M., Logan, J., Goldstein, R.Z., Alia-Klein, N., Wong, C., 2010. Methylphenidate attenuates limbic brain inhibition after cocaine-cues exposure in cocaine abusers. *PLoS One* 5, e11509.
- Volpicelli, J.R., Pettinati, H.M., McLellan, A.T., O'Brien C, P., 2001. Combining medication and psychosocial treatments for addictions: The BRENDA approach. Guilford Press, New York.
- Vonmoos, M., Hulka, L.M., Preller, K.H., Minder, F., Baumgartner, M.R., Quednow, B.B., 2014. Cognitive Impairment in Cocaine Users is Drug-Induced but Partially Reversible: Evidence from a Longitudinal Study. *Neuropsychopharmacology* 39, 2200-2210.
- Wagner, F.A., Anthony, J.C., 2002. From first drug use to drug dependence; developmental periods of risk for dependence upon marijuana, cocaine, and alcohol. *Neuropsychopharmacology* 26, 479-488.
- Walter, K.N., Petry, N.M., 2015. Motivation and Contingency Management Treatments for Substance Use Disorders. *Curr Top Behav Neurosci*, 1-13.
- Weiss, R.D., 2004. Adherence to pharmacotherapy in patients with alcohol and opioid dependence. *Addiction* 99, 1382-1392.

- Weiss, R.D., Griffin, M.L., Hufford, C., Muenz, L.R., Najavits, L.M., Jansson, S.B., Kogan, J., Thompson, H.J., 1997. Early prediction of initiation of abstinence from cocaine. Use of a craving questionnaire. *Am J Addict* 6, 224-231.
- Westhuis, D.J., Gwaltney, L., Hayashi, R., 2001. Outpatient cocaine abuse treatment: predictors of success. *J Drug Educ* 31, 171-183.
- Winhusen, T., Somoza, E., Ciraulo, D.A., Harrer, J.M., Goldsmith, R.J., Grabowski, J., Coleman, F.S., Mindrum, G., Kahn, R., Osman, S., Mezinskis, J., Li, S.H., Lewis, D., Horn, P., Montgomery, M.A., Elkashaf, A., 2007a. A double-blind, placebo-controlled trial of tiagabine for the treatment of cocaine dependence. *Drug Alcohol Depend* 91, 141-148.
- Winhusen, T., Somoza, E., Sarid-Segal, O., Goldsmith, R.J., Harrer, J.M., Coleman, F.S., Kahn, R., Osman, S., Mezinskis, J., Li, S.H., Lewis, D., Afshar, M., Ciraulo, D.A., Horn, P., Montgomery, M.A., Elkashaf, A., 2007b. A double-blind, placebo-controlled trial of reserpine for the treatment of cocaine dependence. *Drug Alcohol Depend* 91, 205-212.
- Wisor, J., 2013. Modafinil as a Catecholaminergic Agent: Empirical Evidence and Unanswered Questions. *Front Neurol* 4, 139.
- Wisselink, D.J., Kuijpers, W.G.T., Mol, A., 2013. Kerncijfers verslavingszorg 2012. LADIS: Landelijk Alcohol en Drugs Informatie Systeem. Stichting Informatie Voorziening Zorg (IVZ), Houten.
- Wisselink, D.J., Kuijpers, W.G.T., Mol, A., 2014. Kerncijfers verslavingszorg 2013. LADIS: Landelijk Alcohol en Drugs Informatie Systeem. Stichting Informatie Voorziening Zorg (IVZ), Houten.
- Wisselink, D.J., Kuijpers, W.G.T., Mol, A., 2015. Kerncijfers verslavingszorg 2014. LADIS: Landelijk Alcohol en Drugs Informatie Systeem. Stichting Informatie Voorziening Zorg (IVZ), Houten.
- Wood, S., Sage, J.R., Shuman, T., Anagnostaras, S.G., 2014. Psychostimulants and cognition: a continuum of behavioral and cognitive activation. *Pharmacol Rev* 66, 193-221.
- World Health Organization, 2003. Adherence to long-term therapies: Evidence for action. In: Sabaté, E. (Ed.). World Health Organization, Geneva.
- Xi, Z.X., Song, R., Li, X., Lu, G.Y., Peng, X.Q., He, Y., Bi, G.H., Shen, P., Yang, H.J., Zhang, H., Li, J., Froimowitz, M., Gardner, E.L., 2016. CTDP-32,476: A Promising Agonist Therapy for Treatment of Cocaine Addiction. *Neuropsychopharmacology* 42, 682-694.
- Zack, M., Poulos, C.X., 2009. Effects of the atypical stimulant modafinil on a brief gambling episode in pathological gamblers with high vs. low impulsivity. *J Psychopharmacol* 23, 660-671.

Zelen, M., 1979. A new design for randomized clinical trials. *N Engl J Med* 300, 1242-1245.

Zolkowska, D., Jain, R., Rothman, R.B., Partilla, J.S., Roth, B.L., Setola, V., Prisinzano, T.E., Baumann, M.H., 2009. Evidence for the Involvement of Dopamine Transporters in Behavioral Stimulant Effects of Modafinil. *J Pharmacol Exp Ther* 329, 738-746.

Curriculum Vitae

Mascha Nuijten was born on the 19th of July 1975 in Bergen op Zoom, the Netherlands. She completed her pre-university education in 1993 and studied social work at the Social Academy in Breda, which she completed in 1998. After a 5-year working period in the addiction care, she started her study in Clinical and Health Psychology at Leiden University in 2003 where she received her Research Master (cum laude) and Professional Master in 2008. During her research internship she examined the influence of stress on memory in an fMRI-study at the Leiden University Medical Centre. She also was an intern psychologist at the department of Trauma & Dissociation of PsyQ in The Hague. During her study, she kept working in addiction care as a researcher.

After graduation, Mascha worked for two years as a psychologist in addiction care before she started her PhD on new pharmacological treatment options for cocaine dependence in 2010 at the research department of Brijder Addiction Care in The Hague, in collaboration with the Academic Medical Centre of the University of Amsterdam in Amsterdam. The results of this study have been published in international peer-reviewed journals, including Drug and Alcohol Dependence, Journal of Psychopharmacology and The Lancet. For the latter paper on the effectiveness of SR dexamfetamine in crack-cocaine dependence she received the Dr. Peter Moleman Award 2016.

During the completion of her thesis, she was also involved in the planning, organisation and implementation of new addiction research.

Mascha lives in Utrecht together with Onno and their daughter Karlijn.

List of Publications

This thesis

Nuijten, M., Blanken, P., Van de Wetering, B., Nuijen, B., Van den Brink, W., & Hendriks, V. (2016). Sustained-release dexamfetamine in the treatment of chronic cocaine-dependent patients on heroin-assisted treatment: a randomised, double-blind, placebo-controlled, double-blind trial. *The Lancet*, 387, 2226-2234.

Nuijten, M., Blanken, P., Van den Brink, W., Goudriaan, A., & Hendriks, V. (2016). Impulsivity and attentional bias as predictors of the treatment with modafinil on retention and drug use in crack-cocaine dependent patients: results of a randomised controlled trial. *Journal of Psychopharmacology*, 30, 616-626.

Nuijten, M., Blanken, P., Van den Brink, W., & Hendriks, V. (2015). Modafinil in the treatment of crack-cocaine dependence in the Netherlands: Results of an open-label randomised controlled feasibility trial. *Journal of Psychopharmacology*, 29, 678-687.

Nuijten, M., Blanken, P., Van den Brink, W., & Hendriks, V. (2014). Treatment of crack-cocaine dependence with topiramate: A randomised controlled feasibility trial in the Netherlands. *Drug and Alcohol Dependence*, 138, 177-184.

Nuijten, M., Blanken, P., Van den Brink, W., & Hendriks, V. (2011). Cocaine Addiction Treatments to improve Control and reduce Harm (CATCH): New Pharmacological Treatment Options for Crack-Cocaine Dependence in the Netherlands. *BMC Psychiatry*, 11:135.

Other papers

Nuijten, M., Blanken, P., Van de Wetering, B., Nuijen, B., Van den Brink, W., & Hendriks, V. (2016). Substitutiebehandeling met dexamfetamine SR naast medische heroïne bij chronische cocaïne- en opiaatafhankelijkheid. *Psyfar*, 4, 59-63.

Nuijten, M., Blanken, P., Van de Wetering, B., Nuijen, B., Van den Brink, W., & Hendriks, V. (2016). Dexamfetamine met vertraagde afgifte als behandeling van

crackafhankelijkheid bij opiaatverslaafden die heroïne op medisch voorschrijf ontvangen. *Verslaving*, 12, 207-216.

Nuijten, M. (2016). Substitutie met dexamfetamine SR naast medische heroïne bij chronische crack- en opiaatafhankelijkheid. *Tijdschrift voor Psychiatrie*, 58, 608-608.

Nuijten, M. (2014). Acceptatie en effectiviteit van topiramaat in de behandeling van cocaïne-afhankelijkheid. *Tijdschrift voor Psychiatrie*, 56, 617-618.

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