

Neural and cognitive determinants of smoking addiction and cessation

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Propositions accompanying the dissertation

Neural and cognitive determinants of smoking addiction and cessation

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Maastricht, May 13th 2016

1. Addiction is maintained by both bottom-up and top-down neurocognitive processes. Addressing only one of these processes in the treatment of smoking addiction is useless; a combined approach is needed.
2. Even if future nicotine vaccines can successfully prevent nicotine from entering the brain, this will not be the key to successful prolonged abstinence. (*This thesis: chapter 1 & general discussion*)
3. Selective processing of smoking related cues under influence of smoking abstinence can be traced back to object sensitive visual area Lateral Occipital Complex (LOC). (*This thesis: chapter 2 & 3*)
4. Attention bias modification (ABM) training reduces attention bias and cue-elicited, but not background craving. Therefore this type of training is likely to be more effective for relapse prevention than for smoking cessation. (*This thesis: chapter 4*)
5. The effectiveness of ABM is not influenced by demographic or smoking related characteristics, and therefore is generalizable to the overall population of smokers. (*This thesis: chapter 5*)
6. Smokers are characterized by impaired cognitive control, including poor motor response inhibition. As a consequence, excessive motion related artefacts can be seen in their neuroimaging data.
7. Increasing numbers of patients will resort to online therapeutic applications instead of traditional therapies because they are cheap, accessible for a broad public, and easy to implement in daily routines.
8. Within a few decades a new smoke free generation will rise and this field of research will go up in smoke.