

# Tobacco in Australia

## Facts & Issues

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### Relevant news and research

#### 6.3 Mechanism of action

*Last updated April 2021*

#### Research:

Butler, K, Chenoweth, MJ, El-Boraie, A, Giratallah, H, Kowalczyk, WJ, Heishman, SJ et al (2021). Impact Of Cyp2a6 Activity On Nicotine Reinforcement And Cue-Reactivity In Daily Smokers. *Nicotine Tob Res*. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33823003>

Ryu, IS, Kim, J, Yang, JH, Seo, SY, Sohn, S, Kim, S et al (2020). Exposure to Commercial Cigarette Smoke Produces Psychomotor Sensitization Via Hyperstimulation of Glutamate Response in the Dorsal Striatum. *Brain Sci*, 11(1). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33374316>

Qiu, X, Han, X, Wang, Y, Ding, W, Sun, Y, Zhou, Y et al (2020). Interaction Between Smoking and Internet Gaming Disorder on Spontaneous Brain Activity. *Front Psychiatry*, 11, 586114. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33343420>

Zawertailo, L, Attwells, S, deRuiter, WK, Le, TL, Dawson, D, & Selby, P. (2020). Food Addiction and Tobacco Use Disorder: Common Liability and Shared Mechanisms. *Nutrients*, 12(12). Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33334010>

Wang, C, Wang, S, Shen, Z, Qian, W, Jiaerken, Y, Luo, X et al (2020). Increased thalamic volume and decreased thalamo-precuneus functional connectivity are associated with smoking relapse. *Neuroimage Clin*, 28, 102451. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/33022581>

Bari, AA, Sparks, H, Levinson, S, Wilson, B, London, ED, Langevin, JP, & Pouratian, N. (2020). Amygdala Structural Connectivity is associated with impulsive choice and difficulty quitting smoking. *Front Behav Neurosci*, 14, 117. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/32714164>

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Ashok, AH, Mizuno, Y, & Howes, OD. (2019). Tobacco smoking and dopaminergic function in humans: a meta-analysis of molecular imaging studies. *Psychopharmacology (Berl)*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30887059>

Yuan, K, Zhao, M, Yu, D, Manza, P, Volkow, ND, Wang, GJ, & Tian, J. (2019). Correction: Striato-cortical tracts predict 12-h abstinence-induced lapse in smokers. *Neuropsychopharmacology*. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30858533>

Sharp, BM, Chen, H. Neurogenetic Determinants and Mechanisms of Addiction to Nicotine and Smoked Tobacco. *Eur J Neurosci*. Sept 2018. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/30256469>

Ng HW, Leggett C, Sakkiah S, Pan B, Ye H, et al. Competitive docking model for prediction of the human nicotinic acetylcholine receptor alpha7 binding of tobacco constituents. *Oncotarget*, 2018; 9(24):16899-916. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/29682193>

McKim W and Hancock S, *Drugs and behaviour: An introduction to behavioural pharmacology*. 7 ed New York: Pearson; 2013.

Tapper A, CKinney S, Nashmi R, Schwarz J, Deshpande P, et al. Nicotine activation of alpha4\* receptors: Sufficient reward, tolerance, and sensitization. *Science*, 2005; (306):1029–32. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/15528443>

Zevin S, Gourlay SG, and Benowitz NL. Clinical pharmacology of nicotine. *Clin Dermatol*, 1998; 16(5):557–64. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/9787965>

Picciotto M, Zoli M, Rimondini R, Lean C, Marubio L, et al. Acteylcholine receptors containing the beta2 subunit are involved in the reinforcing properties of nicotine. *Nature*, 1998; 391:173–7. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/9428762>

## News reports: