

Addiction is a serious public health problem that causes morbidity and mortality and economic burden. Recognizing that addiction results from the choices made by those with that disorder, the field of addiction science, beginning in the 21st century has increasingly focused its attention on decision making processes. A hallmark of addiction is the fact that the individual suffering from it continues to use despite negative consequences. Progress in identifying the neurobehavioral decision processes underlying disadvantageous decision making evident in addiction could facilitate the transition from a symptom-focused approach to a mechanism-focused approach, and this may further the development of treatments for these conditions. Decision-making impairments can be both the cause and consequence of addiction. Some of the traits linked to substance use vulnerability, such as reward-sensitivity and impulsivity, contribute to poorer performance in decision-making tasks. Similarly, the deleterious effects of chronic substance use on frontostriatal and limbic systems have been shown to produce or exacerbate impairments in cognitive control processes that contribute to decision making, such as working memory. This presentation will focus on neurobehavioral theories of impaired decision-making in addiction; impairments in three stages of decision-making in addiction, namely, preference formation, choice implementation, and feedback processing; and implications of impaired decision-making in addiction.

Recent Publications

1. Bickel W K, Mellis A M, Snider S E, Athamneh L N, Stein J S and Pope D A (2017) 21st century neurobehavioral theories of decision making in addiction: Review and evaluation. *Pharmacology Biochemistry and Behavior* 164:4-21.
2. Verdejo Garcia A, Lawrence A J and Clark L (2008) Impulsivity as a vulnerability marker for substance-use

disorders: Review of findings from high-risk research, problem gamblers and genetic association studies. *Neurosci Biobehav Rev* 32(4):777–810.

3. Verdejo Garcia A, Chong T T J, Stout J C, Yücel M and London E D (2017) Stages of dysfunctional decision-making in addiction. *Pharmacology Biochemistry and Behavior* 164:99-105.
4. Albein Urios N, Martinez Gonzalez J M, Lozano O, Clark L and Verdejo Garcia A (2012) Comparison of impulsivity and working memory in cocaine addiction and pathological gambling: Implications for cocaine-induced neurotoxicity. *Drug Alcohol Depend* 126(1–2):1–6.
5. Vonmoos M, Hulka L M, Preller K H, Minder F, Baumgartner M R and Quednow B B (2014) Cognitive impairment in cocaine users is drug-induced but partially reversible: Evidence from a longitudinal study. *Neuropsychopharmacology* 39(9):2200–2210.

Biography

Ebru Aldemir has been a Psychiatrist for