treatment. *Arch Gen Psychiatry*. 1973;28(5):611–616.
7. Evans CJ, Cahill CM. Neurobiology of opioid dependence in creating addiction vulnerability. *F1000Res*. 2016;5:F1000 Faculty Rev-1748.
8. Darcq E, Kieffer BL. Opioid receptors: drivers to addiction? *Nat Rev Neurosci*. 2018;19(8):499–514.
9. Vendruscolo LF, Schlosburg JE, Misra KK, Chen SA, Greenwell TN, Koob GF. Escalation patterns of varying periods of heroin access. *Pharmacol Biochem Behav*. 2011;98(4):570–574.
10. Schulteis G, Markou A, Gold LH, Stinus L, Koob GF. Relative sensitivity to naloxone of multiple indices of opiate withdrawal: a quantitative dose-response analysis. *J Pharmacol Exp Ther*. 1994;271(3):1391–1398.
11. Frenois F, Le Moine C, Cador M. The motivational component of withdrawal in opiate addiction: role of associative learning and aversive memory in opiate addiction from a behavioral, anatomical and functional perspective. *Rev Neurosci*. 2005;16(3):255–276.
12. Sumiyoshi A, Keeley RJ, Lu H. Physiological considerations of functional MRI in animal models [published online ahead of print August 17, 2018]. *Biol Psychiatry*. https://doi.org/10.1016/j.bpsc.2018.08.002.
13. Liu HS, et al. Dorsolateral caudate nucleus differentiates cocaine from natural reward-associated contextual cues. *Proc Natl Acad Sci U S A*. 2013;110(10):4093–4098.
14. Paxinos G, Watson C. *The Rat Brain in Stereotaxic Coordinates*. Cambridge, MA: Academic Press; 2014.
15. Gracy KN, Dankiewicz LA, Koob GF. Opiate withdrawal-induced fos immunoreactivity in the rat extended amygdala parallels the development of conditioned place aversion. *Neuropsychopharmacology*. 2001;24(2):152–160.
16. Upadhyay J, et al. Alterations in brain structure and functional connectivity in prescription opioid-dependent patients. *Brain*. 2010;133(Pt 7):2098–2114.
17. Culpepper-Morgan JA, Kreek MJ. Hypothalamic-pituitary-adrenal axis hypersensitivity to naloxone in opioid dependence: a case of naloxone-induced withdrawal. *Metab Clin Exp*. 1997;46(2):130–134.
18. Zhou Y, Leri F, Ho A, Kreek MJ. Suppression of hypothalamic-pituitary-adrenal axis by acute heroin challenge in rats during acute and chronic withdrawal from chronic heroin administration. *Neurochem Res*. 2013;38(9):1850–1860.
19. Koob G, Kreek MJ. Stress, dysregulation of drug reward pathways, and the transition to drug dependence. *Am J Psychiatry*. 2007;164(8):1149–1159.
20. Koob GF, Schulkin J. Addiction and stress: an allostatic view [published online ahead of print: September 2018]. *Neurosci Biobehav Rev*. https://doi.org/10.1016/j.neubiorev.2018.09.008.
21. McCue MG, LeDoux JE, Cain CK. Medial amygdala lesions selectively block aversive pavlovian-instrumental transfer in rats. *Front Behav Neurosci*. 2014;8:329.
22. Jasinska AJ, Stein EA, Kaiser J, Naumer MJ, Yalachkov Y. Factors modulating neural reactivity to drug cues in addiction: a survey of human neuroimaging studies. *Neurosci Biobehav Rev*. 2014;38:1–16.
23. Moningka H, Lichenstein S, Worhunsky PD, DeVito EE, Scheinost D, Yip SW. Can neuroimaging help combat the opioid epidemic? A systematic review of clinical and pharmacological challenge fMRI studies with recommendations for future research. *Neuropsychopharmacology*. 2019;44(2):259–273.
24. Giardino WJ, Eban-Rothschild A, Christoffel DJ, Li SB, Malenka RC, de Lecea L. Parallel circuits from the bed nuclei of stria terminalis to the lateral hypothalamus drive opposing emotional states. *Nat Neurosci*. 2018;21(8):1084–1095.
25. Huang AS, Mitchell JA, Haber SN, Alia-Klein N, Goldstein RZ. The thalamus in drug addiction: from rodents to humans. *Philos Trans R Soc Lond, B, Biol Sci*. 2018;373(1742):pii: 20170028.
26. Canteras NS, Goto M. Connections of the precommissural nucleus. *J Comp Neurol*. 1999;408(1):23–45.
27. Mathis V, Kenny PJ. From controlled to compulsive drug-taking: The role of the habenula in addiction [published online ahead of print: June 2018]. *Neurosci Biobehav Rev*. https://doi.org/10.1016/j.neubiorev.2018.06.018.
28. Zilverstand A, Huang AS, Alia-Klein N, Goldstein RZ. Neuroimaging impaired response inhibition and salience attribution in human drug addiction: a systematic review. *Neuron*. 2018;98(5):886–903.
29. Koob GF, Le Moal M. Plasticity of reward neurocircuitry and the 'dark side' of drug addiction. *Nat Neurosci*. 2005;8(11):1442–1444.
30. Siegel S, Ramos BM. Applying laboratory research: drug anticipation and the treatment of drug addiction. *Exp Clin Psychopharmacol*. 2002;10(3):162–183.
31. Strang J, et al. Loss of tolerance and overdose mortality after inpatient opiate detoxification: follow up study. *BMJ*. 2003;326(7396):959–960.
32. Brynildsen JK, Hsu LM, Ross TJ, Stein EA, Yang Y, Lu H. Physiological characterization of a robust survival rodent fMRI method. *Magn Reson Imaging*. 2017;35:54–60.
33. Lu H, Zou Q, Gu H, Raichle ME, Stein EA, Yang Y. Rat brains also have a default mode network. *Proc Natl Acad Sci U S A*. 2012;109(10):3979–3984.
34. Cox RW. AFNI: software for analysis and visualization of functional magnetic resonance neuroimages. *Comput Biomed Res*. 1996;29(3):162–173.
35. Lu H, et al. Registering and analyzing rat fMRI data in the stereotaxic framework by exploiting intrinsic anatomical features. *Magn Reson Imaging*. 2010;28(1):146–152.