Documents

Carbia, C.[a] , Lannoy, S.[b] , Maurage, P.[c] , López-Caneda, E.[d] , O'Riordan, K.J.[a] , Dinan, T.G.[a e] , Cryan, J.F.[a f]

A biological framework for emotional dysregulation in alcohol misuse: from gut to brain
(2021) *Molecular Psychiatry*, 26 (4), pp. 1098-1118. Cited 16 times.

DOI: 10.1038/s41380-020-00970-6

[a] APC Microbiome Ireland, University College Cork, Cork, Ireland
[b] Stanford University, Department of Psychiatry and Behavioral Sciences, Stanford, CA, United States
[c] Louvain Experimental Psychopathology Research Group (LEP), Psychological Sciences Research Institute, UCLouvain, Louvain-la-Neuve, Belgium
[d] Psychological Neuroscience Laboratory, Research Center in Psychology (CIPsi), School of Psychology, University of Minho, Campus Gualtar, Braga, Portugal
[e] Department of Psychiatry and Neurobehavioural Science, University College Cork, Cork, Ireland
[f] Department of Anatomy and Neuroscience, University College Cork, Cork, Ireland

Abstract
Alcohol use disorder (AUD) has been associated with impairments in social and emotional cognition that play a crucial role in the development and maintenance of addiction. Repeated alcohol intoxications trigger inflammatory processes and sensitise the immune system. In addition, emerging data point to perturbations in the gut microbiome as a key regulator of the inflammatory cascade in AUD. Inflammation and social cognition are potent modulators of one another. At the same time, accumulating evidence implicates the gut microbiome in shaping emotional and social cognition, suggesting the possibility of a common underlying loop of crucial importance for addiction. Here we propose an integrative microbiome neuro-immuno-affective framework of how emotional dysregulation and alcohol-related microbiome dysbiosis could accelerate the cycle of addiction. We outline the overlapping effects of chronic alcohol use, inflammation and microbiome alterations on the fronto-limbic circuitry as a convergence hub for emotional dysregulation. We discuss the interdependent relationship of social cognition, immunity and the microbiome in relation to alcohol misuse- from binge drinking to addiction. In addition, we emphasise adolescence as a sensitive period for the confluence of alcohol harmful effects and emotional dysregulation in the developing gut–brain axis. © 2020, Springer Nature Limited.

Index Keywords
alcohol, alcohol; adolescence, alcoholism, behavior, binge drinking, brain, brain function, cognition, emotion regulation, frontal lobe, gut brain axis, human, immune system, inflammation, intestine, intestine flora, limbic system, model, nonhuman, pathogenesis, Review, social cognition, theory of mind, underage drinking, adolescent, alcoholism, brain, dysbiosis, intestine flora;
Adolescent, Alcoholism, Brain, Dysbiosis, Ethanol, Gastrointestinal Microbiome, Humans

Correspondence Address
Cryan J.F.; APC Microbiome Ireland, Ireland; email: j.cryan@ucc.ie

Publisher: Springer Nature

ISSN: 13594184
CODEN: MOPSF
PubMed ID: 33288871
Language of Original Document: English
Abbreviated Source Title: Mol. Psychiatry
2-s2.0-85097255857
Document Type: Review
Publication Stage: Final
Source: Scopus