



# Retraction Note: Gut Microbiome Dysbiosis and Depression: A Comprehensive Review

Alexander Capuco<sup>1</sup> · Ivan Urits<sup>2</sup> · Jamal Hasoon<sup>2</sup> · Rebecca Chun<sup>3</sup> · Brittany Gerald<sup>3</sup> · Jason K. Wang<sup>4</sup> · Anh L. Ngo<sup>5,6</sup> · Thomas Simopoulos<sup>2</sup> · Alan D. Kaye<sup>7</sup> · Matthew M. Colantonio<sup>7</sup> · Tomasina Q. Parker-Actlis<sup>7</sup> · Mitchell C. Fuller<sup>8</sup> · Omar Viswanath<sup>7,9,10,11</sup>

Published online: 27 March 2023

© Springer Science+Business Media, LLC, part of Springer Nature 2023

## Retraction Note: Current Pain and Headache Reports (2020) 24:36

<https://doi.org/10.1007/s11916-020-00871-x>

The publisher has retracted this article because it is redundant and was published in error. Originally, the article was published as [1]; while it was being considered, the authors did submit this amended version but asked to withdraw. Due to an error, it was published nonetheless. We apologise to the authors and to readers. Alexander Capuco agrees to this retraction. None of the other authors responded to correspondence from the publisher about this retraction.

The original article can be found online at <https://doi.org/10.1007/s11916-020-00871-x>.

✉ Ivan Urits  
iurits@bidmc.harvard.edu; ivanurits@gmail.com

Alexander Capuco  
alexander.capuco@gmail.com

Jamal Hasoon  
jhasoon@bidmc.harvard.edu

Rebecca Chun  
rhchun@email.arizona.edu

Brittany Gerald  
brittanygerald@email.arizona.edu

Jason K. Wang  
jwang198@alumni.stanford.edu

Anh L. Ngo  
anhlngo@gmail.com

Thomas Simopoulos  
tsimopou@bidmc.harvard.edu

Alan D. Kaye  
alankaye44@hotmail.com

Matthew M. Colantonio  
mcolonto@gmail.com

Tomasina Q. Parker-Actlis  
tparke1@lshusc.edu

Omar Viswanath  
viswanoy@gmail.com

## Reference

1. Capuco A, Urits I, Hasoon J, et al. Current perspectives on gut microbiome dysbiosis and depression. *Adv Ther.* 2020;37:1328–46. <https://doi.org/10.1007/s12325-020-01272-7>.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

<sup>1</sup> Georgetown University School of Medicine, Washington, DC, USA

<sup>2</sup> Beth Israel Deaconess Medical Center, Department of Anesthesiology, Critical Care, and Pain Medicine, Harvard Medical School, 330 Brookline Ave., Boston, MA 02215, USA

<sup>3</sup> University of Arizona College of Medicine - Phoenix, Phoenix, AZ, USA

<sup>4</sup> Harvard Medical School, Harvard-MIT Division of Health Sciences and Technology, Boston, MA, USA

<sup>5</sup> Pain Specialty Group, Department of Pain Medicine, Newington, NH, USA

<sup>6</sup> Harvard Medical School, Boston, MA, USA

<sup>7</sup> Louisiana State University Health Sciences Center, Department of Anesthesiology, LA, Shreveport, USA

<sup>8</sup> Medical College of Wisconsin, Wauwatosa, WI, USA

<sup>9</sup> Department of Anesthesiology, Creighton University School of Medicine, NE, Omaha, USA

<sup>10</sup> Department of Anesthesiology, University of Arizona College of Medicine - Phoenix, Phoenix, AZ, USA

<sup>11</sup> Valley Anesthesiology and Pain Consultants – Envision Physician Services, Phoenix, AZ, USA