



**Letter: Intestinal Microbiota Transfer – Updating the Nomenclature to Increase Acceptability**

Journal:	<i>Alimentary Pharmacology &amp; Therapeutics</i>
Manuscript ID	APT-1956-2020
Wiley - Manuscript type:	Letter to the Editors
Date Submitted by the Author:	17-Sep-2020
Complete List of Authors:	Craven, Laura; EnteroBiotix, McIlroy, James; EnteroBiotix Mullish, Benjamin; Imperial College London, Division of Digestive Diseases Marchesi, Julian; Imperial College London, Department of Surgery and Cancer; Cardiff University, School of Biosciences
Keywords:	Clostridium difficile < Topics, Microbiome < Topics, Diarrhoea < Topics, Microbiology < Topics

SCHOLARONE™  
Manuscripts

1 **TitleLetter:** Intestinal Microbiota Transfer – Updating the Nomenclature to Increase

2 Acceptability

3 **Running Title:** Updating the Nomenclature of FMT

4 **Authors:** Laura J. Craven<sup>1\*</sup>, James R. McIlroy<sup>1,2</sup>, Benjamin H. Mullish<sup>3</sup>, Julian R. Marchesi<sup>3,4</sup>

5 **Author Affiliations:**

6 <sup>1</sup>EnteroBiotix Limited, Aberdeen Blood Transfusion Centre, Foresterhill, Aberdeen, United

7 Kingdom

8 <sup>2</sup>School of Medicine, Medical Science & Nutrition, University of Aberdeen, Aberdeen, United

9 Kingdom

10 <sup>3</sup>Division of Digestive Diseases, Department of Metabolism, Digestion and Reproduction,

11 Faculty of Medicine, Imperial College London, London, United Kingdom

12 <sup>4</sup>School of Biosciences, Cardiff University, Cardiff, United Kingdom

13

14 **Corresponding Author:**

15 Dr. Laura J. Craven

16 Email: lcraven2@uwo.ca

17 Address: EnteroBiotix Limited, Aberdeen Blood Transfusion Centre, Foresterhill, Aberdeen,

18 United Kingdom

1  
2  
3 19 We would like to commend Lai and colleagues for their comprehensive review and analysis  
4  
5  
6 20 of 168 faecal microbiota transplantation (FMT) studies<sup>1</sup>. The authors extensively reviewed donor  
7  
8 21 features, procedures, and outcomes of these FMT studies. Their findings highlight the  
9  
10 22 discrepancies in screening of stool donors, the efficacies of the procedure for treatment of  
11  
12 23 various diseases, and a call to action to standardize methods of stool donor selection<sup>1</sup>. This  
13  
14 24 review demonstrated that transferring the intestinal microbiota from one person's intestinal  
15  
16 25 tract into another is a highly effective treatment for recurrent and refractory *Clostridioides*  
17  
18 26 *difficile* infection, with an overall cure rate of 95.6%<sup>1</sup>. However, despite its effectiveness, this  
19  
20 27 procedure still faces negative social perceptions, predominantly related to its name. The term  
21  
22 28 FMT has been widely accepted since it first appeared in the literature in 2011<sup>2</sup>. A number of  
23  
24 29 research groups have altered the terminology since, which can range from the abbreviated  
25  
26 30 "faecal transplant" to "human probiotic infusion"<sup>3</sup> to "intestinal microbiota restitution therapy"<sup>4</sup>.  
27  
28 31 Here we present a table of definitions of the terms that comprise FMT that we propose to change  
29  
30 32 and our suggested alternatives moving forward (Table 1).  
31  
32  
33

33 33 Stigma and negative perceptions surrounding FMT can be barriers to recruit and retain stool  
34  
35 34 donors<sup>5</sup>. It may also impact the likelihood of doctors to discuss this procedure with their patients.  
36  
37 35 A survey found that 69% of medical students believed it would be easier to discuss FMT with  
38  
39 36 patients if it had a more socially acceptable name<sup>6</sup>. We believe that the meaning of 'intestinal'  
40  
41 37 versus 'faecal' does not significantly differ in this context and it could be used as a more appealing  
42  
43 38 substitute that reduces stigma associated with the source of the donor material. This change has  
44  
45 39 been suggested previously to overcome the negative connotations and confusion surrounding  
46  
47 40 the use of 'faecal'<sup>4,7,8</sup>, however FMT is still most commonly found in the literature<sup>1</sup>. The use of  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 41 'intestinal' could lead to higher recruitment of potential stool donors and its more widespread  
4  
5  
6 42 use if it was discussed more freely by healthcare professionals with their patients.  
7

8 43 We support the use of the term 'microbiota', in agreement with previously proposed changes  
9  
10 44 to the nomenclature<sup>4,7</sup>. The suitability of the word 'transplantation' in FMT has been discussed  
11  
12  
13 45 previously and concerns were raised that the word implies a restoration of function, which has  
14  
15 46 yet to be defined in gut microbiome research<sup>4</sup>. We suggest a change from the word  
16  
17  
18 47 'transplantation' to 'transfer', as transplantation implies that engraftment is necessary to be  
19  
20 48 termed successful<sup>9</sup>; however, the need for donor microbiota engraftment has yet to be  
21  
22  
23 49 definitively proven. In conclusion, we propose the phrase intestinal microbiota transfer (IMT) be  
24  
25 50 utilised moving forward instead of faecal microbiota transplantation to more accurately reflect  
26  
27  
28 51 the procedure and increase its acceptability by patients, donors, and healthcare workers. IMT is  
29  
30 52 an effective and lifesaving therapy<sup>1</sup>; its name should no longer be a barrier to its acceptability  
31  
32 53 and accessibility.  
33  
34

35 54

36  
37 55 **Acknowledgements:**

38  
39  
40 56 The Division of Digestive Diseases receives financial support from the National Institute of  
41  
42 57 Health Research (NIHR) Biomedical Research Centre based at Imperial College Healthcare NHS  
43  
44  
45 58 Trust and Imperial College London. BHM is the recipient of an NIHR Academic Clinical  
46  
47 59 Lectureship (CL-2019-21-002).  
48

49  
50 60  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 61 **Author Contributions:** James R. McIlroy conceived the presented idea. Laura J. Craven prepared  
4  
5  
6 62 the first draft of the manuscript. All other authors contributed to manuscript review and  
7  
8 63 revisions. Julian R. Marchesi is the guarantor of the article.  
9

10  
11 64

12  
13 65 **Statement of Interests:**

14  
15 66 Laura J. Craven is a paid consultant for EnteroBiotix. James R. McIlroy is employed by and holds  
16  
17  
18 67 shares in EnteroBiotix Limited. James R. McIlroy is a named inventor on several microbiome  
19  
20 68 related patent applications. Benjamin H. Mullish reports personal fees from Finch Therapeutics  
21  
22  
23 69 Group.  
24

25 70

26  
27  
28 71 **Funding source:** None to disclose  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## 72 References:

- 73 1. Lai CY, Sung J, Cheng F, et al. Systemic review with meta-analysis: review of donor  
74 features, procedures and outcomes in 168 clinical studies of faecal microbiota  
75 transplantation. *Aliment Pharmacol Ther* 2019;49:354–363.
- 76 2. Bakken JS, Borody T, Brandt LJ, et al. Treating *Clostridium difficile* infection with fecal  
77 microbiota transplantation. *Clin Gastroenterol Hepatol* 2011;9:1044–1049.
- 78 3. McCune VL, Skruthers JK, Hawkey PM. Faecal transplantation for the treatment of  
79 *Clostridium difficile* infection: a review. *Int J Antimicrob Agents* 2014;43:201–206.
- 80 4. Phillips CA, Ahamed R, Rajesh S, Augustine P. ‘You know my name, but not my story’-  
81 deciding on an accurate nomenclature for faecal microbiota transplantation. *J Hepatol*  
82 2020;72:1212–1213.
- 83 5. McSweeney B, Allegretti JR, Fischer M, et al. In search of stool donors: a multicenter  
84 study of prior knowledge, perceptions, motivators, and deterrents among potential  
85 donors for fecal microbiota transplantation. *Gut Microbes* 2020;11:51–62.
- 86 6. Madar PC, Petre O, Baban A, Dumitrascu DL. Medical students’ perception on fecal  
87 microbiota transplantation. *BMC Med Educ* 2019;19:368. doi: 10.1186/s12909-019-  
88 1804-7
- 89 7. Khoruts A and Brandt LJ. Fecal microbiota transplant: a rose by any other name. *Am J*  
90 *Gastroenterol* 2019;114:1176.
- 91 8. Bajaj JS and Khoruts A. Microbiota changes and intestinal microbiota transplantation in  
92 liver diseases and cirrhosis. *J Hepatol* 2020;72:1003–1027.
- 93 9. World Health Organization. Transplantation. <https://www.who.int/topics/transplantati>

1  
2  
3 94 on/en/ Accessed 15 September 2020.  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

For Peer Review

## 95 Tables

<b>Table 1. Proposed Changes to Nomenclature</b>	
<b>Existing</b>	<b>Proposed</b>
<b>Faecal:</b> relating to, or constituting faeces <sup>†</sup>	<b>Intestinal:</b> affecting, occurring, or living in the intestine <sup>†</sup>
<b>Transplantation:</b> the transfer (engraftment) of human cells, tissues or organs from a donor to a recipient with the aim of restoring function(s) in the body <sup>9</sup>	<b>Transfer:</b> to convey from one person, place, or situation to another <sup>†</sup>

96 <sup>†</sup> Defined by Merriam-Webster Dictionary

97

For Peer Review