**Supplementary Material**

**Table 5.** Summary of Results From Both Animal and Human Models About the Role of Gut Biotics in Mental Health Conditions

|  |  |  |
| --- | --- | --- |
| **Condition** | **Gut biotic** | **Outcome** |
| Dementia | Probiotics | Mice models showed improved cognitive function especially in spatial and non-spatial memory domains [143, 224, 229].  Patients with AD showed improved cognitive function as demonstrated by higher MMSE scores [84, 157]. |
| Prebiotics | Helped to reduce the risk of dementia in patients [245]. |
| Anxiety | Probiotics | Mice models showed decreased anxiety-like behaviors and improved cognition [77, 239].  Patients showed improvement with depression and anxiety as well as Stress Rating Scales. There was a reduction in anxiety symptoms [77, 239]. |
| Prebiotics | Patients had decreased salivary cortisol and reduced attentional vigilance [180]. |
| Depression | Probiotics | Treated mice showed a reduction in depressive-like symptoms [241-243].  Patients had improvement in Depressive Rating Scales, such as Beck’s Depressive Index Score. There was also amelioration in mood symptoms [89, 251]. |
| Prebiotics | Patients had improved mood and GI symptoms [101]. |
| PTSD | Probiotics | Treated mice showed improvement in anxiety-like behaviors [188].  Human subjects had reduced plasma CRP levels [253]. |
| Prebiotics | Patients showed reduced anxiety levels and also improvement in insomnia [190]. |
| OCD | Probiotics | Mice models showed a reduction in OCD-like symptoms [192].  Individuals had reduced OCD symptoms [194]. |
| Schizophrenia | Probiotics | Mice models showed reduced anxiety-like and repetitive behaviors. However, no change in sociability [199].  Patients showed improvement in GI symptoms [202-204]. |
| Bipolar disorder | Probiotics | Patients had decreased rehospitalization rates and improved psychomotor processing [212, 213]. |

AD: Alzheimer’s disease; CRP: C-reactive protein; GI: gastrointestinal; MMSE: mini-mental status exam; OCD: obsessive-compulsive disorder; PTSD: post-traumatic stress disorder.

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