OVERARCHING INFLUENCE OF PROBIOTICS ON END-ORGAN PHYSIOLOGY VIA GUT MICROBIOME

SYSTEM	IMPROVES CONDITION / SYMPTOM*	*Lactobacilli*												*Bifidobacteria*							
		gasseri	*casei*	*helveticus*	*salivarius*	*johnsonii*	*acidophilus*	*plantarum*	*paracasei*	*fermentum*	*rhamnosus*	*delbrueckii spp. bulgaricus*	*reuteri*	*longum*	*breve*	*infantis*	*animalis spp. lactis*	*bifidum*	*Bacillus bifidus*	*Streptococcus thermophilus*	*Saccharomyces boulardii*
NERVOUS	Anxiety		●	●										●							
	Depression		●																		
RESPIRATORY	Asthma	●									●										
	Allergic rhinitis		●								●		●		●						
	Antigen-induced cytokines	●	●	●					●								●				
OBESITY	Body weight	●																			
	Total cholesterol		●				●				●	●		●	●					●	
	LDL-cholesterol		●				●				●	●		●	●					●	
	Triglycerides		●				●				●	●		●	●					●	
	Abdominal visceral fat	●																			
	Insulin sensitivity																●				
NON-ALCOHOLIC FATTY LIVER DISEASE	Inflammatory cytokines		●				●	●				●		●	●	●				●	
	Blood ammonia						●	●	●			●		●			●			●	
	Liver enzymes							●				●						●		●	
	Ascitic fluid						●					●							●	●	
GASTROINTESTINAL TRACT	Irritable Bowel Syndrome																				
	- Pain						●	●	●		●	●	●	●	●	●	●	●		●	
	- Altered Bowel Habits		●				●				●			●			●	●		●	
	- Bloating						●	●	●		●	●		●	●	●	●	●		●	
	Antibiotic diarrhoea		●				●	●	●		●	●		●	●	●	●			●	●
	Infectious diarrhoea	●							●		●		●	●			●				
	Helicobacter pylori						●						●			●	●				
	Pouchitis						●	●	●			●	●	●	●	●				●	
	Inflammatory Bowel Disease																				
	- Crohn's disease																				●
	- Ulcerative colitis						●	●	●			●		●	●	●		●		●	
CHRONIC KIDNEY DISEASE	Serum uric acid						●							●						●	
	Blood urea nitrogen						●							●						●	
	Serum P-cresol		●												●						
SKIN	UV-induced damage					●															
	Eczema						●		●		●		●	●			●	●			
	Atopic dermatitis				●		●			●	●				●		●				

*HUMAN CLINICAL STUDIES

1. Vitetta L, Manuel R, Zhou JY, Linnane AW, Coulson S. The overarching influence of the gut microbiome on end-organ function: the role of live probiotic cultures. *Pharmaceuticals* (Basel) 2014;7(9):954-89.
2. Vitetta L, Briskey D, Alford H, Hall S, Coulson S. Probiotics, prebiotics and the gastrointestinal tract in health and disease. *Inflammopharmacology* 2014;22(3):135-54.

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