The gut-brain axis in personalised mental healthcare

CPD QUESTIONNAIRE

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1. Signalling from the brain to the gut affects:

☐ **A** Motility ☐ **B** Sensory functions
☐ **C** Secretory functions ☐ **D** All of the above

2. Which of the following mechanisms are not involved in gut-brain communication?

☐ **A** Cellular components released by the gut ☐ **B** Altered activity of gut nervous system neurons
☐ **C** Amino acid surges ☐ **D** The vagus nerve

3. Toll-like receptors on epithelial and immune cells are stimulated by cellular components from the gut and are important receptors leading to the gut-immune response. True or false?

☐ **A** True ☐ **B** False

4. Dysbiosis is associated with which of the following mental health conditions?

☐ **A** Depression ☐ **B** Anxiety
☐ **C** ADHD ☐ **D** All of the above

5. The main environmental factors affecting the microbiota in the first few years of life are:

☐ **A** Mother-to-child bacterial transfer ☐ **B** Method of delivery
☐ **C** Breastfeeding and early solid food ☐ **D** A + B
☐ **E** A, B + C

6. Prenatal and postnatal maternal dysbiosis may affect the infant's brain development. True or false?

☐ **A** True ☐ **B** False

7. In elderly frail patients with diabetes and cardiac abnormalities, the number of taxa in the gut microbiome is:

☐ **A** Increased, with adverse effects on gut health ☐ **B** Decreased, with adverse effects on gut health

8. Which of the following statements is correct? Probiotics have proven beneficial effects in:

☐ **A** Reducing diarrhoea associated with antibiotics ☐ **B** Alleviating symptoms of schizophrenia

9. Probiotics reduce the symptom severity in a variety of immune-associated gastrointestinal tract conditions such as:

☐ **A** Irritable bowel syndrome ☐ **B** Coeliac disease ☐ **C** Both of the above

10. In a study of depression and anxiety post-partum, which of the following *Lactobacillus* species was associated with benefit?

☐ **A** *Lactobacillus rhamnosus* ☐ **B** *Lactobacillus reuteri*

11. The term 'psychobiotics' refers to a number of known probiotics that have shown beneficial effects in alleviating symptoms of mental ill health such as depression and anxiety. True or false?

☐ **A** True ☐ **B** False

12. In a study of adults with irritable bowel syndrome and mild depression/anxiety, functional magnetic resonance imaging resulted in:

☐ **A** Reduced brain response to negative emotional stimuli ☐ **B** Lower anxiety scores
☐ **C** Better depression scores ☐ **D** All of the above

13. In the study reporting psychological benefits in irritable bowel syndrome, for how long were patients treated?

☐ **A** Four weeks ☐ **B** Six weeks ☐ **C** Three months

14. In the above study, which areas of the brain were associated with a reduced response to negative stimuli?

☐ **A** Amygdala ☐ **B** Fronto-limbic regions ☐ **C** Both of the above

15. Probiotics are associated with beneficial effects in patients with mild depression. True or false?

☐ **A** True ☐ **B** False