

Self-assessment questions: Making sense of gut-brain signals

Graham J Dockray

1 Ingestion of lipid:

- (a) Releases the intestinal hormone cholecystokinin (CCK)
- (b) Decreases the blood oxygen level-dependent (BOLD) signal in magnetic resonance images of hypothalamus
- (c) Increases central nervous system (CNS) responses to visual and auditory cues for sadness
- (d) Acutely increases vagal afferent neuron discharge
- (e) Inhibits food intake via ghrelin release

2 Vagal afferent neurons:

- (a) Mediate painful sensations from the stomach
- (b) Exhibit leptin resistance in obesity
- (c) Are inhibited by cholecystokinin (CCK)
- (d) Constitute the afferent arm of reflexes leading to inhibition of gastric emptying
- (e) Exhibit nutrient-dependent neurochemical plasticity

3 The gut microbiota:

- (a) Change in obesity
- (b) Might decrease food intake via release of cholecystokinin (CCK)
- (c) Contribute to obesity through increased energy extraction
- (d) Do not influence vagal afferent responses to leptin
- (e) Participate in gut–brain but not brain–gut signalling

Answers to these self-assessment questions can be found on page s92.