What controls the human gastrointestinal tract: The BRAIN or the GUT

The first biped walked this earth 8 to 9 million years ago. The first humanoid, Homo erectus, hit the ground running about 1.9 million years ago. Our species, Homo sapiens, first pondered his surroundings about 300,000 years ago. Jericho where hunter gatherers and wheat farmers first clashed was about 12,000 years ago. The wheel was first made about 4000 years ago. The first steam engine in 1710 propelled us to modern man and the rest is history.

What does this brief review teach us? Firstly, our ancestors have been around for a long time. Secondly, we survived and developed without books, schools and universities for an awfully long time. How did we do it? Answer "We followed our gut"! (Sorry). The point is we have a vast built in knowledge of survival tools. From warm clothes to a varied diet. Of course much has become unacceptable for our woke society. Meat and wheat now have a bad rap and leather shoes and jackets are frowned upon. After300 000 years how did we lose contact with ourselves in the past 100?

The intention is to explore our gastrointestinal tract, it's foibles and diseases with these articles in future.

Meanwhile for this first article what controls our digestive system? Fortunately it is largely self-regulated with many nerves and hormones controlling things locally but the conductor is based in our brains, conscious and unconscious.

The vagus nerve leaves our brain just below the skull and travels down alongside the major blood levels to supply the whole gut. If the nerve is cut, we lose coordinated peristalsis in the stomach and intestines, acid output is reduced, and we suffer with rapid gastric emptying. This in turn plays havoc with our blood sugar levels and causes diarrhoea. The main cause for a cut vagus nerve used to be surgery to the oesophago-gastro area. Complications of hiatal hernia repair and gastric ulcer surgery were the main culprits but these days treatment with acid reducing drugs obviates the need for surgery in most patients. Like spinal cord injury there is no going back after vagal nerve damage.

The other controlling mechanism is the large array of hormones secreted by the stomach, intestine, pancreas and liver. We will discuss these in due course but for the moment it is safe to say that GUT control is multifactorial.

As always, most problems start at the top. In Dickens' novel, Oliver Twist, the Artful Dodger picked a pocket or two but who was the criminal? In the end, poor Fagin met the noose but who is looking after the boys now. Things are often very complicated when apportioning blame and in the case of gastroenterology the role of the mind both conscious and unconscious can never be underestimated. Often symptoms are multifactorial, and we need to treat what we can, admit our lack of knowledge and

reassure about what we cannot explain. The substitution of parasites, leaky gut, wheat and unbased allergies for symptoms is an insult to our 300 000 years of progress.

Functional upper gastrointestinal and irritable bowel symptoms blend into normal abdominal sensations such as a feeling of fullness after a large meal or the loss of appetite before a big interview. This interaction of normal sensations and the psyche may confuse the assessment of the severity of functional conditions.

The most dramatic demonstration of the power of the mind over the body must lie in neurology where hysterical paralysis baffles the patient, onlookers and physicians. We have a long way to go in the study our bodies. Persistent nausea and abdominal cramps can provide a challenge.

Over the next few chapters, we will try and understand gastrointestinal conditions from the point of view of the facts available to us.