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## Chapter 4

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### The ENS and surrounding tissues

#### Introduction

This session was co-chaired by Jan Tack and Ove Lundgren and it examines functional differences between different types of cells in the gastrointestinal tract which act as targets for enteric motor neurones. The complexity of smooth muscle cells, in terms of receptors and their response to a variety of neurotransmitters, both exogenous and endogenous, is discussed by Raj Goyal. Sean Ward describes the very specialised population of cells, the interstitial cells of Cajal, which are thought to have a role both as electrical pacemakers and as mediators of enteric transmission in the gastrointestinal tract. He also explores study designs which might be used to elucidate their role more fully.

Other important sensory cells in the gastrointestinal tract are the enteroendocrine cells which are probably involved in sensing luminal contents so that appropriate motor and secretory activity can be initiated to facilitate uptake or expulsion of the contents. The role of these cells is discussed by David Grundy. In Peter Holzer's article, he covers the role of chemoceptive afferent neurones in the homeostasis of the gastric mucosa. The contribution of these neurones to vascular regulation and signalling of chemical insults is discussed. In the final paper of this chapter, Javier Santos focuses on immune regulation in the intestinal mucosa, and in particular on the role of mast cells in intestinal allergic reactions and on the effects of stress on epithelial physiology.