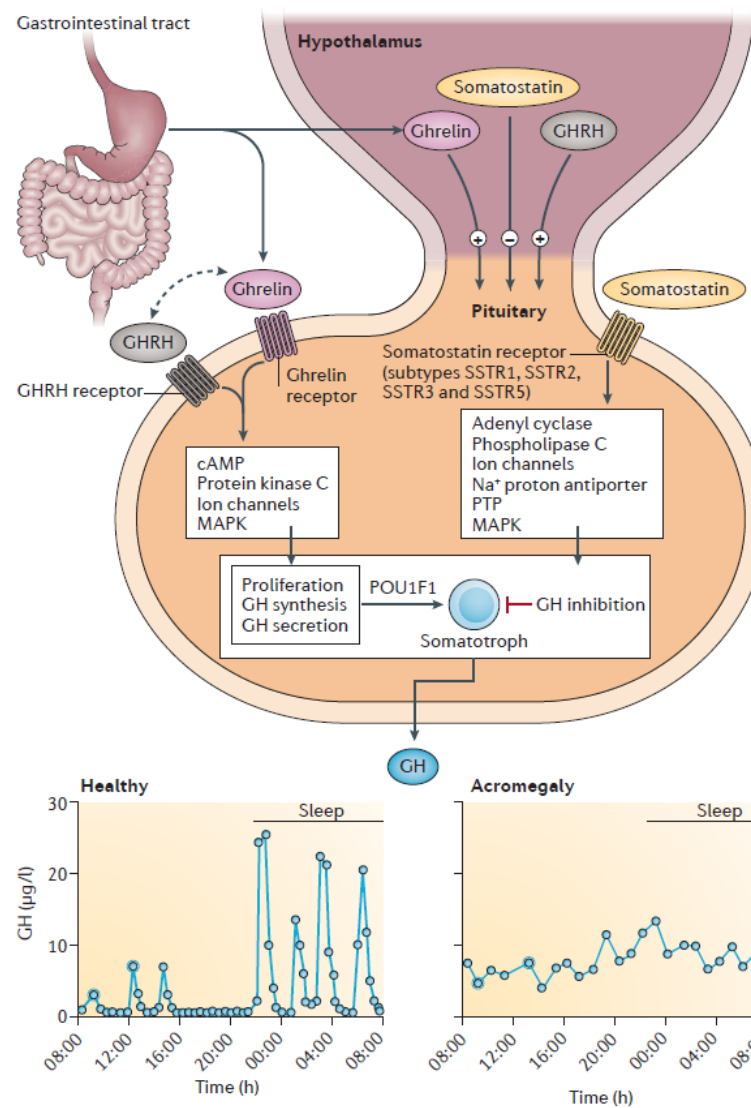


GH secretion



Growth hormone (GH) is synthesized in pituitary somatotroph cells under the transcriptional control of cell-specific factors, including pituitary-specific positive transcription factor 1 (POU1F1). The hypothalamus provides both positive (+) and negative (-) regulation of GH production mediated by hypothalamic hormones traversing the pituitary portal system to impinge upon somatotroph cells, and generating intracellular somatotroph signals. Hypothalamic growth-hormone-releasing hormone (GHRH) and gut-derived ghrelin induce GH synthesis and secretion. The graphs depict representative patterns of GH secretion under normal conditions and in patients with acromegaly. MAPK, mitogen-activated protein kinase; Na, sodium; PTP, phosphotyrosine phosphatase; SSTR, somatostatin receptor.