

SS01-2 **Role played by afferent signals from olfactory, gustatory gastro-intestinal sensors in regulation of autonomic nerve activity**

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To study the role played by olfactory, gustatory and visceral afferent inputs in regulation of autonomic nerve activity, a series of experiment was conducted in anahetized rats. (1) Effect of olfactory stimulation: stimulation by the grape fruit oil activated sympathetic outflow and that of lavender oil increased vagal outflow. Stimulative flavor of curry powder and vinegar enhanced sympathetic nerve activity. (2) Effect of gustatory stimulation: Effect of sweet taste stimulation resulted in activation in vagal nerve activity and suppression in sympathetic nerve activity. Simulation with other four basic tastes such as salty, bitter, acid and umami taste demonstrated opposite response to sweet taste. (3) Amino acid sensors in the intestinal wall responded to amino acids. 4 amino acids (methionine, threonine, glycine and histidine) evoked a suppressive response in afferent activity and the other amino acid showed an excitatory response. Stimulation of these amino acid sensors evoked reflex responses in autonomic outflows. (4) Gastric amino acid sensors: interestingly, among those amino acids, only monosodium glutamate (MSG) evoked an excitatory response in afferent activity in the gastric vagus nerve. Intra-gastric stimulation with MSG caused reflex activation in vagal and sympathetic outflows. It can be suggested that afferent signals from olfactory, gustatory sensors and gastrointestinal chemosensors may play a role in regulation of autonomic nerve activity and visceral functions.