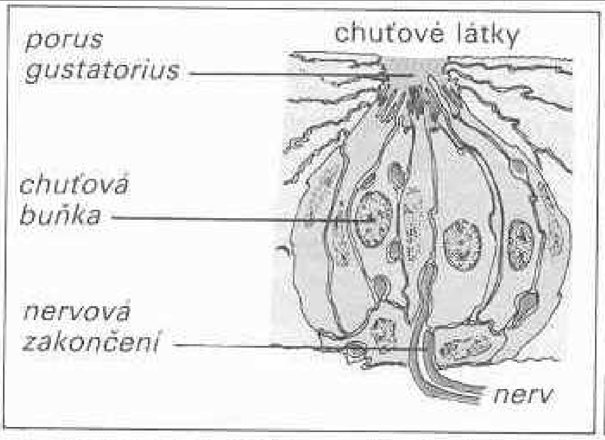
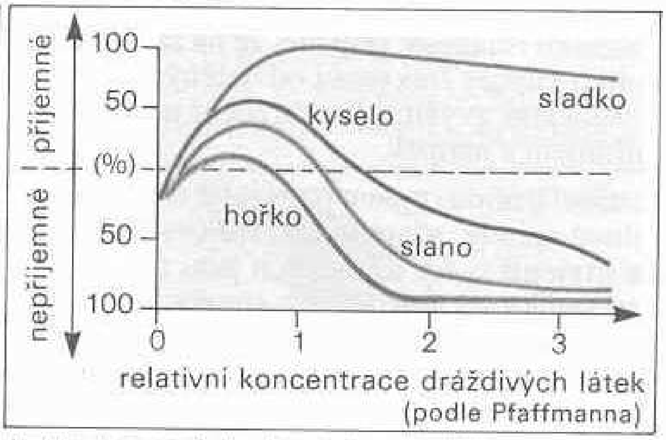
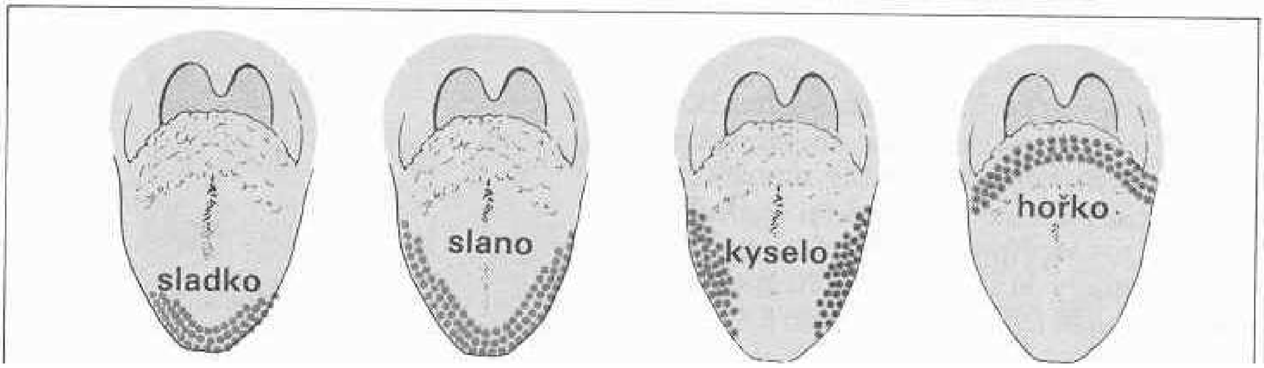
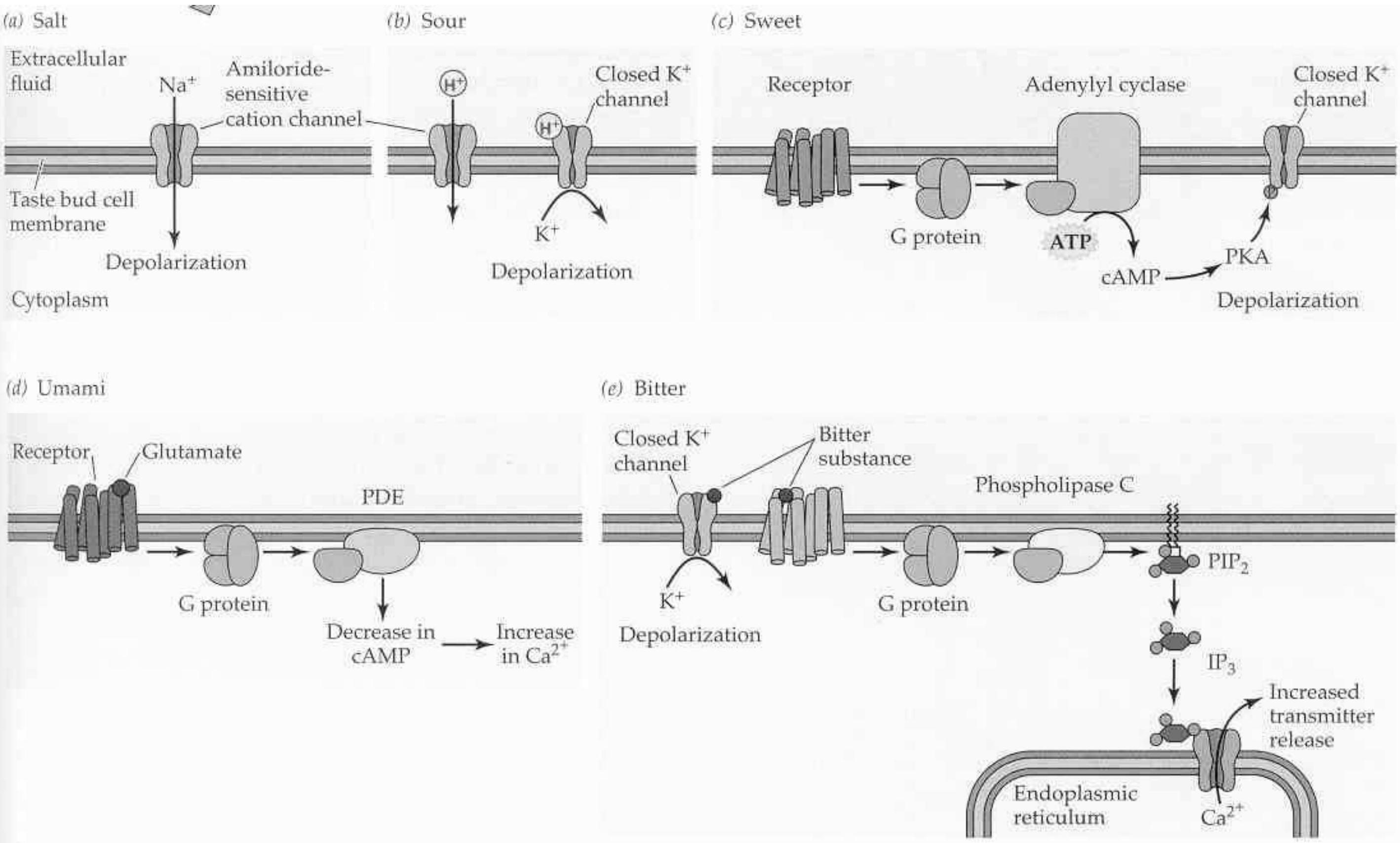


E. Chuťový pohárek (podle Andrese)

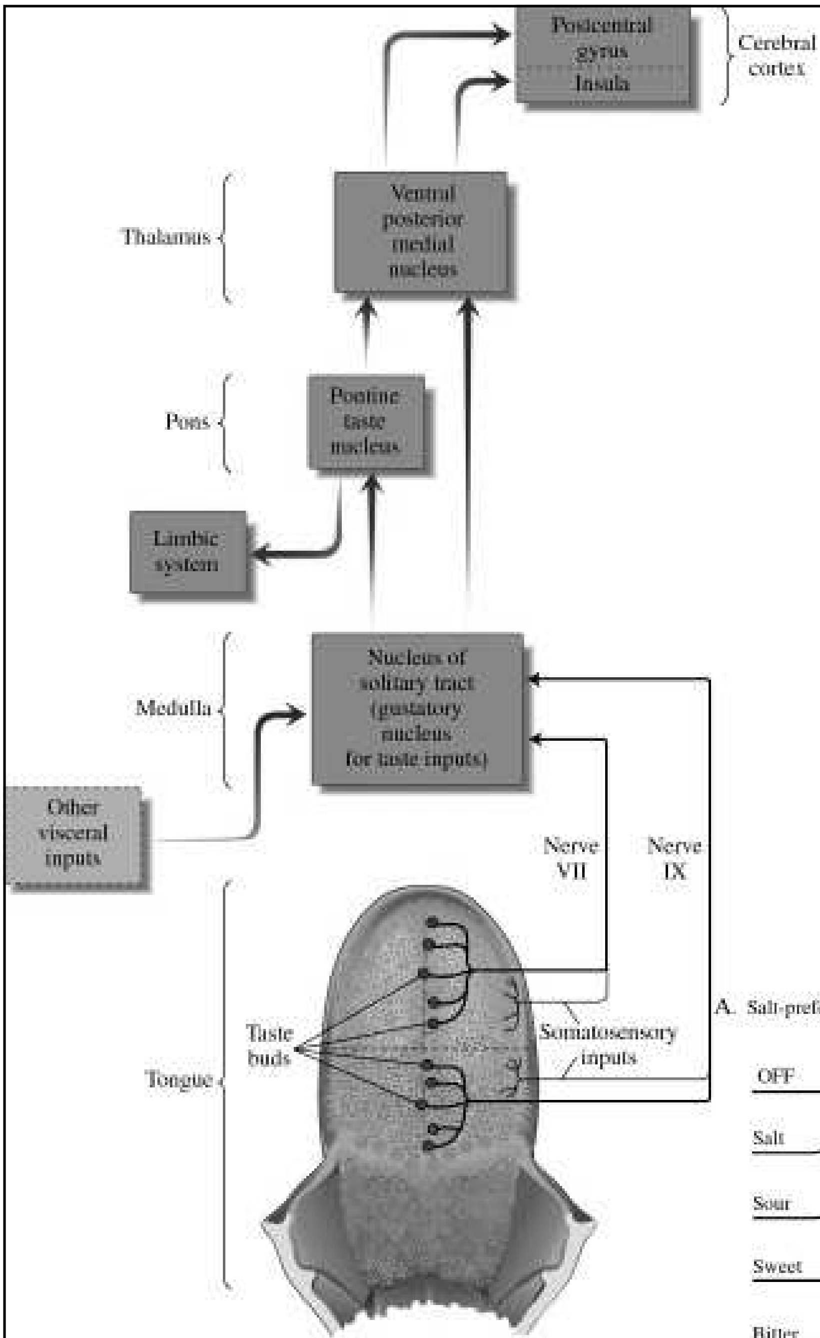


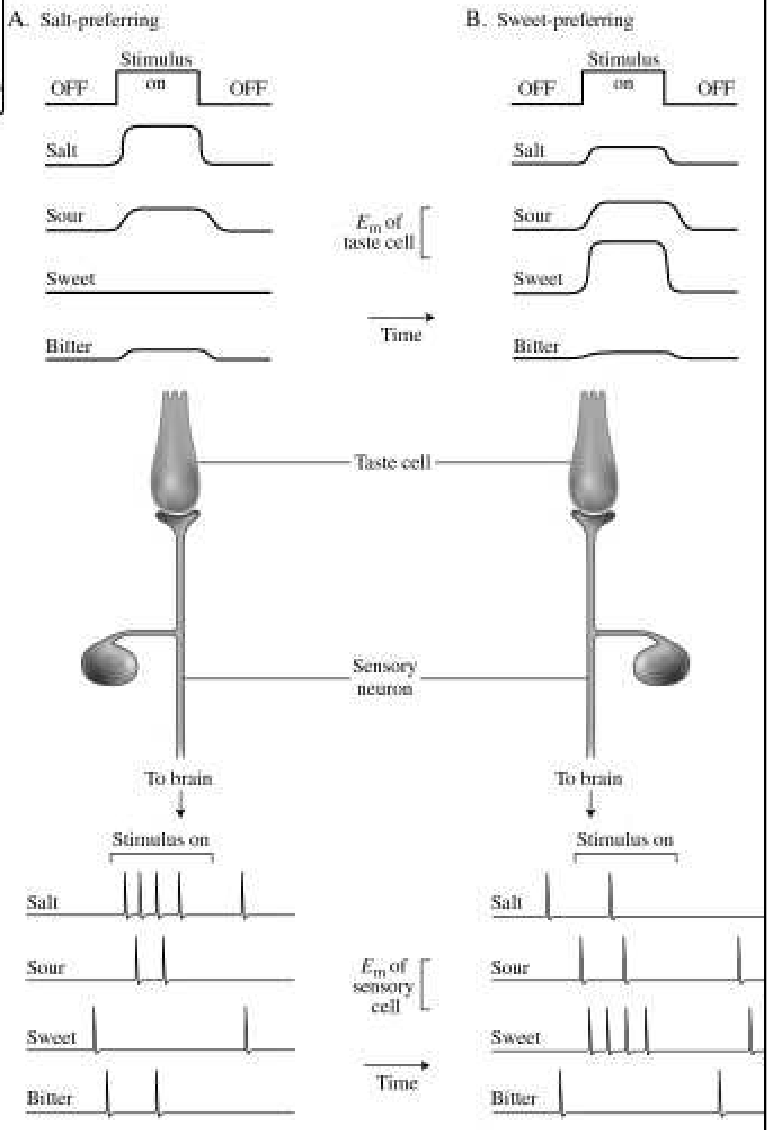
F. Hodnocení chuťových podnětů





gure 13.34 Taste-transduction mechanisms differ for different ste qualities All transduction mechanisms except the IP_3 action in) lead to *depolarization*, which spreads to the basal end of the cell nd opens voltage-gated Ca^{2+} channels to allow Ca^{2+} entry and trans-itter release. *(a)* For salt taste, sodium ions enter a taste bud cell rough amiloride-sensitive cation channels, directly depolarizing the ell. *(b)* In sour taste, either H^+ ions enter the cell through amiloride-ensitive cation channels, or they close K^+ channels to produce depo-rization. *(c)* Sweet taste is most commonly mediated by the binding f sugars to a G protein–coupled receptor, which acts via a G protein to ctivate adenylyl cyclase and produce cyclic AMP. Cyclic AMP then acti-tes protein kinase A (PKA) to close a K^+ channel (by phosphorylating it), producing depolarization. *(d)* The amino acid glutamate (monosodi-um glutamate, MSG) stimulates the taste quality umami (a savory or meaty quality). Glutamate binds to a G protein–coupled receptor (related to synaptic metabotropic glutamate receptors) to activate a phosphodiesterase (PDE) and decrease the concentration of cAMP. The decrease in cAMP leads to an increase in intracellular Ca^{2+} concentra-tion. *(e)* Bitter taste mechanisms can involve a G protein–coupled receptor for bitter substances that acts via a G protein and phospholi-pase C to produce IP_3. IP_3 liberates Ca^{2+} ions from intracellular stores, eliciting transmitter release without requiring depolarization. Other bitter substances bind to K^+ channels and close them to depolarize the cell.


Postcentral gyrus
Insula
Cerebral cortex
Thalamus
Ventral posterior medial nucleus
Pons
Pontine taste nucleus
Limbic system
Medulla
Nucleus of solitary tract (gustatory nucleus for taste inputs)
Other visceral inputs
Nerve VII
Nerve IX
Taste buds
Somatosensory inputs
Tongue


A. Salt-preferring
B. Sweet-preferring
Stimulus on
OFF
OFF
Salt
Sour
Sweet
Bitter
E_m of taste cell
Time
Taste cell
Sensory neuron
To brain
Stimulus on
E_m of sensory cell
Time