Operant associative olfactory learning

Specific context: Pairing of a neutral odorant stimulus with a reward

Acquisition of a specific behavior for getting the reward

Effect on bulbar neurogenesis: Increased survival of newborn neurons
Selection of newly generated neurons supporting long term memory

Operant associative olfactory learning

No effect on bulbar neurogenesis

Non operant associative olfactory learning

Specific context: Pairing of a neutral odorant stimulus with a reward

Effect on bulbar neurogenesis:
Increased survival of newborn neurons
Increased short term memory

Olfactory perceptual learning

Specific context: Lasting several days with repeated exposures of similar odorants

Effect on bulbar neurogenesis:
Increased survival of newborn neurons
Improved odorant discrimination

Olfactory enrichment

Specific context: Lasting several days with repeated exposures of novel odorants

Effect on bulbar neurogenesis:
Increased survival of newborn neurons
Increased short term memory

No effect on bulbar neurogenesis

Simple exposition to odorants

Specific context: lasting minutes to hours

No effect on bulbar neurogenesis