Puberty-accelerating male pheromones induce early expression of male-directed odor preference in adult female mice

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Puberty onset in female mice is accelerated by male pheromones. Whether peripubertal exposure to male odors also influences female sexual behavior in adulthood is at present unclear. We provide evidence that females exposed to male odors and thus showing puberty acceleration, displayed a preference for intact male over female or castrated male odors at postnatal day (PD) 45; while a preference for male odors emerged later (at PD60) in control females. By GC/MS analysis, we found several volatiles in male-soiled bedding known to induce puberty acceleration, such as 6-hydroxy-6-methyl-3-heptanone (HMH), 2-sec-butyl-4,5-dihydrothiazole (SBT) and 3,4-dehydro-exo-brevicomin (DHB) and we replicate previous results showing that peripubertal exposure to HMH, SBT or DHB accelerated the onset of puberty in female mice. In addition, we show that exposure to the blend of these three molecules induced early expression of male-directed odor preference at PD45, contrary to the single exposure to each of these molecules. In conclusion, male pheromones exposed during the peripubertal period influence both female puberty and adult expression of male-directed odor preference.I thank ECRO to support my attendance to this meeting.