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REDUCED EXPLORATION AND INCREASED ANXIETY: AUTISTIC-LIKE FEATURES IN *EHMT1*^{+/-} MICE?

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Recently, we and others have defined the chromosome 9q subtelomere deletion syndrome (9qSTDS). Patients have severe mental retardation, little/no speech, hypotonia, behavioral problems, facial abnormalities, and postnatal developmental delay. This syndrome is caused by haplo-insufficiency of Eu-HMTase1, a histone methyltransferase involved in euchromatic gene silencing. In mice, it is highly expressed during (brain) embryonic development. Absence of the *Ehmt1* gene will most likely affect brain development and, as a result, higher cognitive functions. *Ehmt1* heterozygous knockout *Ehmt1*^{+/-} mice were generated (homozygous knockouts are not viable), and breeding with *Ehmt1*^{+/-} males and C57BL/6J females was started. Since more than half of the 9qSTDS patients have (autistic-like) behavioral problems, we wanted to study possible differences in behavior between adult wildtype and *Ehmt1*^{+/-} mice. Several behavioral tests were used: the open field, light-dark box, marble burying, object recognition, and mirrored chamber test. The results revealed reduced exploration and increased anxiety for *Ehmt1*^{+/-} mice when exposed to a new environment. Furthermore, preliminary results demonstrate decreased social play by *Ehmt1*^{+/-} mice in a social interaction test. So, *Ehmt1*^{+/-} mice display autistic-like features that correspond to the phenotype of human patients with a heterozygous *EHMT1* mutation or deletion. Additional experiments are ongoing in order to determine whether the *Ehmt1*^{+/-} mouse represents a faithful mammalian model to gain better insight into the neuropathology of the 9qSTDS.