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TITLE: Distinguishing dimensions of social withdrawal in childhood: Polygenic score differently predict trajectories of social wariness and preference for solitude from age 6 to 12 years

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ABSTRACT:

Background. Chronic social withdrawal in childhood is associated with socioemotional problems, such as loneliness and peer exclusion¹. However, as social withdrawal is multifaceted, it is crucial to distinguish social wariness from preference for solitude in examining developmental pathways. These two dimensions of social withdrawal vary in their affective and motivational underpinnings^{2,3}, and possibly have different genetic and environmental etiology. While persisting social withdrawal is predominantly accounted for by genetic factors⁴, it remains unclear whether the development of social wariness and preference for solitude is explained by similar or distinct genetic factors. **Objective.** The objective is to examine if and how polygenic scores (PGSs) of known traits associated with social withdrawal (depression, loneliness, subjective well-being, ADHD, ASD) uniquely and jointly predict trajectories of social wariness and preference for solitude from age 6 to 12 years. **Method.** Teacher-rated measures for social wariness and preference for solitude were collected at five occasions between 6 and 12 years for 1406 genotyped participants from two prospective longitudinal studies in Quebec, Canada (QNTS and QLSCD). Latent class growth analyses were conducted to identify longitudinal trajectories, which were then predicted by PGSs in multinomial regressions. **Results.** A high-chronic preference for solitude was modestly predicted by each individual PGS, as well as by the common genetic variation shared among them. In contrast, high-chronic social wariness was only modestly predicted by the loneliness polygenic score. **Conclusion.** These findings support a genetic distinction between these two dimensions of social withdrawal.

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