**Supplementary materials**

**The results for the rs1421085 polymorphism**

We tested the rs1421085 allele modification of the association between BMI and affective symptoms using the similar SEM framework to the main analysis. We considered rs1421085 C allele a high risk for higher BMI and affective symptoms in an additive genetic model.

The rs1421085 modification model specified in figure 1b had good fit in males (n = 1,236, CFI = .951, RMSEA = .039) and females (n = 1,233, CFI = .942, RMSEA = .043). In both sexes, the rs1421085 C allele was associated with higher BMI at age 11 years, but not with subsequent rates of change (Supplementary figure s2).