- We obtained evidence that a gender difference might exist with respect to how a single nucleotide polymorphism (SNP) in the catechol-o-methyltransferase gene affects executive function performance^{1,2}. While one version of the gene might be more beneficial for males, the other version may be more beneficial for females. The current research attempted to A) replicate the gender by genotype interaction found by Diamond and colleagues, and B) further investigate why such a gender difference might exist, by examining how differences in estrogen levels between males and females might be involved in mediating the interaction.