Statement about the Chen et al study

Comment: Use of decreased anxiety-like effects as a critical effect (p. G-6). Public commenters questioned whether decreased anxiety-like effects are adverse effects. The EPA response explains that decreased anxiety represents a clear change in nervous system function and can impair an organism's ability to react to a potentially harmful situation. Further discussion on this endpoint is provided in the response to Charge Question 2a.

With regard to neurobehavioral assessment, it is important to focus on the mutually supportive effects across behavioral domains in determining the reliability and pervasiveness of the low dose neurodevelopmental BaP effects. With regard to the elevated plus maze specifically as a test of anxiety, the significant effects of neurodevelopmental BaP exposure were found on all four measures used with this test and showed increased movement of the BaP exposed groups to the open arms of the maze relative to unexposed controls. This could be interpreted as decreased anxiety or increased risk taking of the animals. However, with tests such as this, the anthropromorphic judgment of its meaning in human terms is less important than the fact that it represents a persistent behavioral change caused by developmental BaP exposure that is significantly different from control behavior and as such may be regarded as an abnormal response. Given that BaP induced behavioral changes in other behavioral tests ranging from reflex development to Morris water maze performance, the results of this study provide converging evidence that shows a consistent pattern of alterations caused by developmental BaP exposure that can be seen from early development to adulthood that may be irreversible.