

PRENATAL INHALATION EXPOSURE TO EVAPORATIVE CONDENSATES OF GASOLINE WITH 15% ETHANOL AND EVALUATION OF SENSORY FUNCTION IN ADULT RAT OFFSPRING. W K Boyes<sup>1</sup>, L L Degn<sup>1</sup>, D F Lyke<sup>1</sup>, T E Beasley<sup>1</sup>, P A Evansky<sup>2</sup>, S A Martin<sup>1</sup>, J Ortenzio, L Pantlin, P J Bushnell<sup>1</sup>, and D W Herr<sup>1</sup>. <sup>1</sup>NB/TAD/NHEERL, <sup>2</sup>EPHD/NHEERL, ORD, US EPA, RTP, NC, USA.

The introduction of ethanol-blended automotive fuels has raised concerns about potential health effects from inhalation exposure to the combination of ethanol and gasoline hydrocarbon vapors. Previously, we evaluated effects of prenatal inhalation exposure to 100% ethanol (E100) or to gasoline (E0) vapors on sensory function of the offspring as a component of a larger biofuels research program. This study evaluated effects of exposure to vapors from a blend of 15% ethanol /gasoline (E15) on the same set of outcome measures used previously. Pregnant Long-Evans rats were exposed to 0, 3K, 6K, or 9K ppm E15 vapors for 6.5 h/day over GD9 – GD20. Sensory evaluations of offspring (1 male pup/litter) began around PND106. Peripheral nerve function (compound action potentials, NCV), somatosensory (cortical and cerebellar evoked potentials), auditory (brainstem auditory evoked responses), and visual evoked responses were assessed. Visual function assessment included pattern elicited visual evoked potentials (VEP), VEP contrast sensitivity, dark-adapted (scotopic) and light-adapted (photopic) flash electroretinograms (ERG), and UV and green flicker ERGs. Although some minor statistical differences were observed for auditory and somatosensory responses, these changes were not systematically related to dose. All physiological responses showed changes related to stimulus intensity, and provided an estimate of detectable levels of change. Overall, the results identified no persistent dose-related functional impairments of the peripheral nerve, somatosensory, auditory, or visual systems resulting from gestational exposure to E15 vapors. Additional studies are in progress to evaluate the effects of exposure to the evaporative condensate vapors from a blend of 85% ethanol with gasoline (E85). *This is an abstract of a proposed presentation and does not necessarily reflect EPA policy.*