

Supplemental Figure 1: *Distribution of physical activity level based on CDC guideline recommendations in n=129 children ages 9-14 years.*

Supplemental Figure 2: *CDC recommended physical activity patterns stratified by sex, asthma, sensitization, and total IgE. Chi-square test to determine differences in activity level by each variable. Percentage of children in each category represented as number of children that meet the activity criteria divided by total number of children within each stratified category. Asthma diagnosis defined by a physician at age 5 - 12 years and presence of asthma symptoms or medication use in the 1 year prior to enrollment. MVA: moderate-to-vigorous activity, VA: vigorous activity.*

Supplemental Figure 3: *Personal BC exposure by number of days with ≥ 60 min of MVA daily.* The small white lines indicate individual observations, while the black areas demonstrate the distribution. The dotted line indicates the overall geometric mean and the thicker solid lines represent the geometric mean concentration for each group of children. BC: black carbon, MVA: moderate to vigorous activity, VA: vigorous activity.

References

Bonsignore, M. R., et al., 2008. Effects of exercise training and montelukast in children with mild asthma. *Med Sci Sports Exerc.* 40, 405-12.

Cai, J., et al., 2013. Optimization approaches to ameliorate humidity and vibration related issues using the microAeth black carbon monitor for personal exposure measurement. *Aerosol Sci Technol.* 47, 1196-1204.