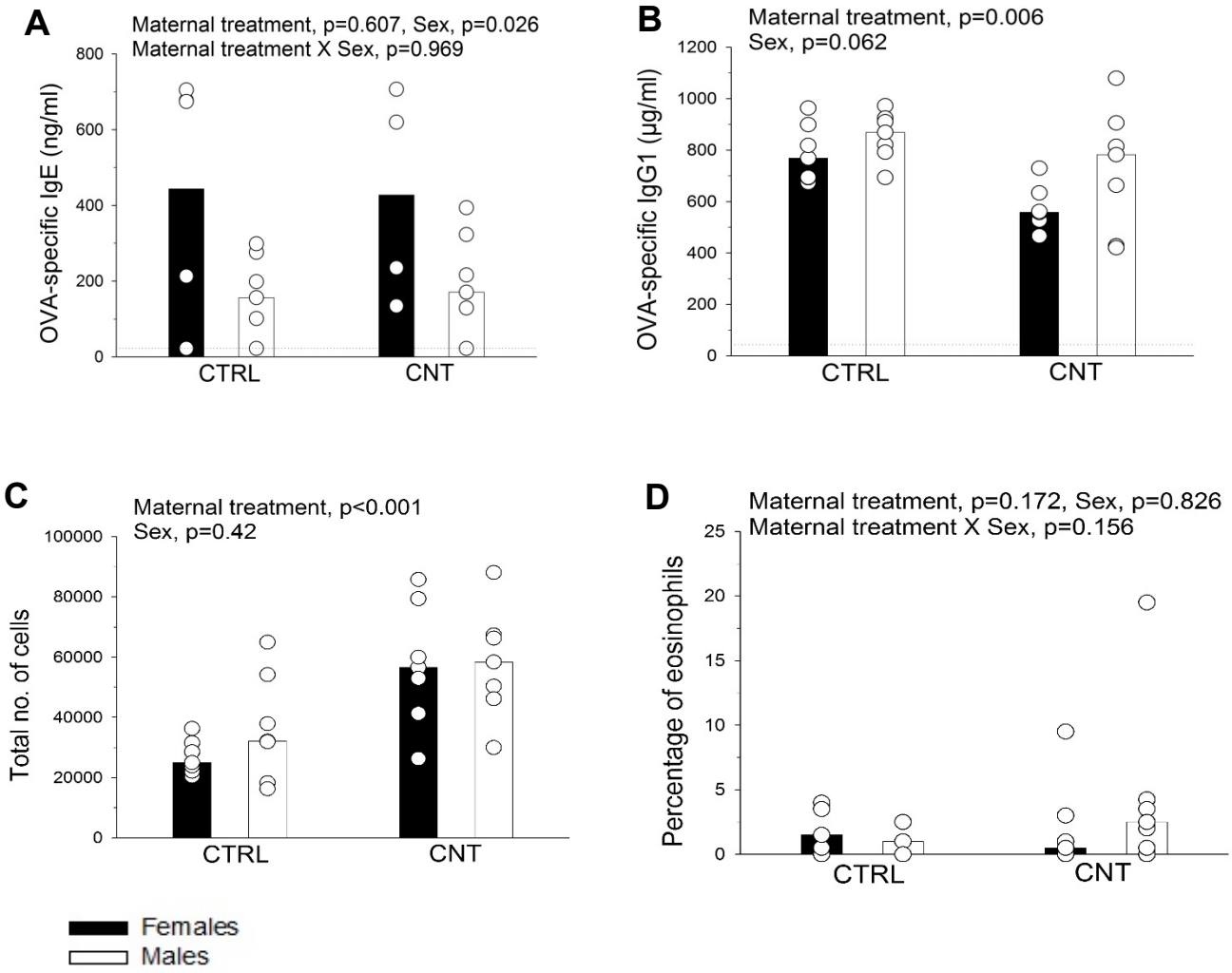
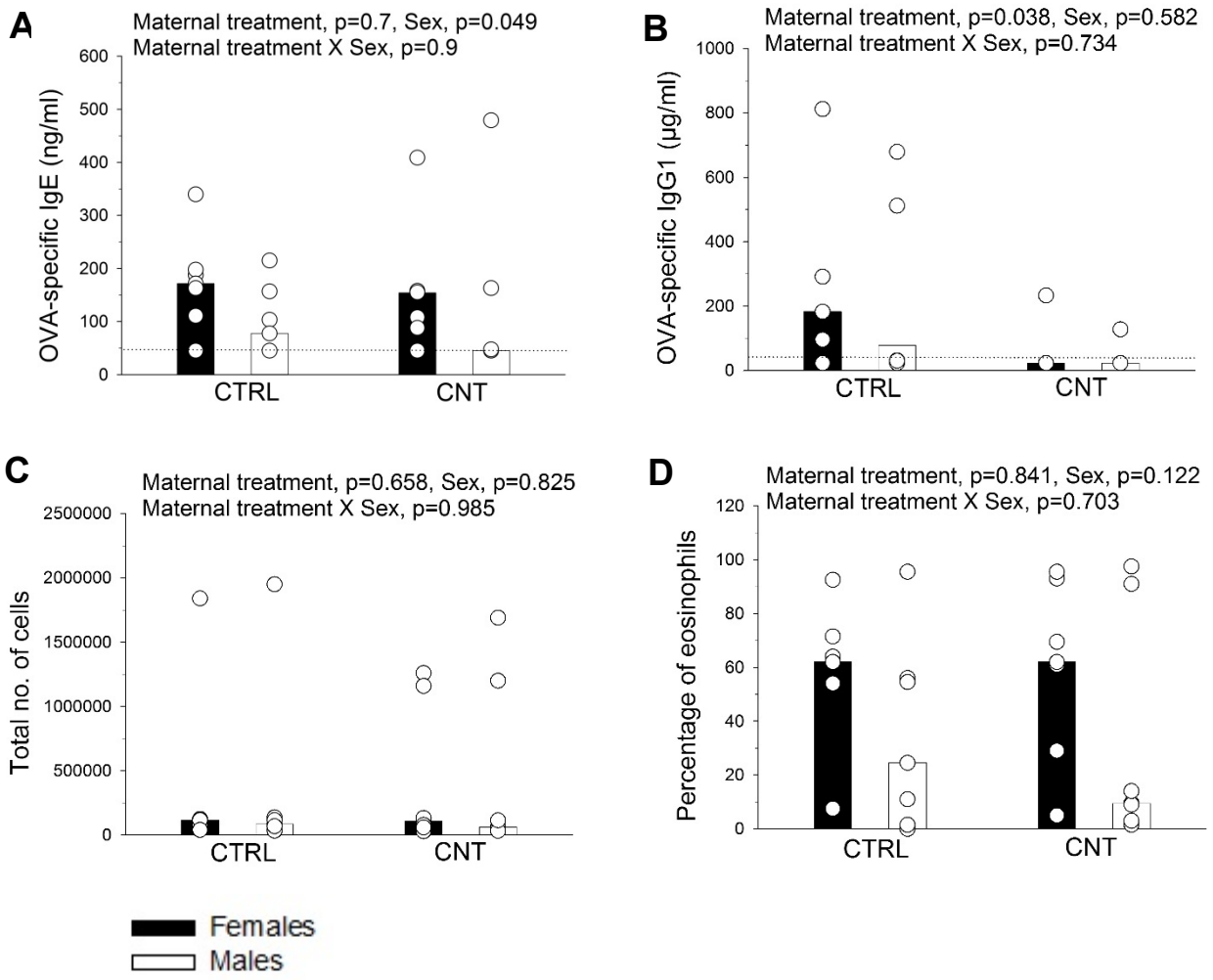
Supplementary Figure 1



Supplementary figure 1: Offspring from 7 control (CTRL) or 7 carbon nanotube (CNT) dams (experiment 1) were immunized intraperitoneally with 5µg ovalbumin (OVA) and 1 mg $Al(OH)_3$ when 4 weeks old. One week later, the offspring were exposed to an aerosol from a 0.001% OVA solution for 20 min on three consecutive days. Blood and bronchoalveolar lavage fluid were collected 3 days later. OVA-specific IgE (A) and IgG1 (B) were measured in serum. Lungs were lavaged and the total number of cells (C) and the percentage of eosinophils (D) in the recovered lavage fluid were determined. Median and individual values of n=7 mice are shown. P-values of the GLM analyses are given above the figures. Data in (D) were log-transformed for the statistical analysis. Broken line indicates the lower detection limit of the ELISA.

Supplementary Figure 2



Supplementary figure 2: Offspring from 7 control (CTRL) or 7 carbon nanotube (CNT) dams (experiment 2) were immunized intraperitoneally with 5µg ovalbumin (OVA) and 1 mg $Al(OH)_3$ when 2 weeks old. After one week, they received a booster injection with 5 µg OVA. One week later, the offspring were exposed to an aerosol from a 1% OVA solution for 20 min on three consecutive days. Blood and bronchoalveolar lavage fluid were collected 3 days later. OVA-specific IgE (A) and IgG1 (B) were measured in serum. Lungs were lavaged and the total number of cells (C) and the percentage of eosinophils (D) in the recovered lavage fluid were determined. Median and individual values of n=7 mice are shown, except for (B), where n=5. P-values of the GLM analyses are given above the figures. Data in (A), (B) and (C) were log-transformed for the statistical analyses. Broken line indicates the lower detection limit of the ELISA.

Supplementary Table 1

PubMed search, 24th of February 2020	(immune OR suppres* OR immunosuppres*) AND (nanomaterials OR nanoparticles OR nanoparticle OR nanotube OR nanotubes OR CNT OR carbon) AND (developmental OR maternal OR gestational OR prenatal OR postnatal) AND (human OR mouse OR mice OR rat OR rats OR rodent or rodents)
Results	300
Summary of 6 articles concerned with prenatal exposure to nanoparticles (NPs) and immune function in offspring.	
Shimizu *et al.*, 2014	Instillation of CB-NPs i.n. on GD 5 and 9: reduced T-cells in spleens of 1-5-day-old male offspring, but cell numbers recovered at PND14. No clear effects on mRNA expression in offspring spleens.
El-Sayed *et al.*, 2015	Instillation of CB-NPs i.n. on GD 9 and 15. Thymocytes were increased in offspring,
Park *et al.*, 2016, Park *et al.*, 2017	Iron oxide or SWCNTs were instilled in parents and in offspring. Effects of parental exposure cannot be separated from the acute effects of particles administered directly in offspring.
Adamcakova-Dodd *et al.*, 2015	Maternal inhalation of Cu NPs on GD 3-19. Soluble and non-carbon-based NPs used for this study.
Cai, Zang, Wu, Liu, & Wang, 2019	TiO_2, ZnO or ZrO_2 NPs of different sizes were given to dams by airway or oral exposure daily during lactation. NPs were found in breast milk and in offspring organs along with pathological changes depending on type of NP and maternal exposure route. NP exposure affected offspring body weight and therefore, survival rate. Maternal ZnO NP airway exposure caused an inflammatory response in offspring blood.

References

Adamcakova-Dodd, A.*, et al.*, 2015. Effects of prenatal inhalation exposure to copper nanoparticles on murine dams and offspring. *Part Fibre Toxicol,* 12**,** 30.

Cai, J., *et al*., 2019. Translocation of transition metal oxide nanoparticles to breast milk and offspring: The necessity of bridging mother-offspring-integration toxicological assessments. *Environment International*, 133, 105153.

El-Sayed, Y.S.*, et al.*, 2015. Carbon black nanoparticle exposure during middle and late fetal development induces immune activation in male offspring mice. *Toxicology,* 327**,** 53-61.

Park, E.J.*, et al.*, 2016. Subchronic immunotoxicity and screening of reproductive toxicity and developmental immunotoxicity following single instillation of HIPCO-single-walled carbon nanotubes: purity-based comparison. *Nanotoxicology,* 10**,** 1188-202.

Park, E.J.*, et al.*, 2017. Deleterious effects in reproduction and developmental immunity elicited by pulmonary iron oxide nanoparticles. *Environ Res,* 152**,** 503-513.

Shimizu, R.*, et al.*, 2014. Effect of maternal exposure to carbon black nanoparticle during early gestation on the splenic phenotype of neonatal mouse. *J Toxicol Sci,* 39**,** 571-8.