

Polyfluoroalkyl substances (PFAS) are chemical pollutants that are classified as endocrine-disrupting chemical family and are used within a variety of industrial manufacturing and consumer products. PFASs easily bioaccumulate and disperse within ecosystems leading to biochemical and physiological disruptions on affected populations. Previous studies have associated PFAS's exposure with the development of immunotoxicity including immunosuppression, hypersensitivity, and autoimmunity in people living within regions of high exposure levels. Children and adolescence appear to be the most affected by PFAS exposure as it can diminish the development of vaccine antibodies. Within Washington State, high levels of PFASs have been observed over several locations near various military bases, however evaluation of the health effects on the surroundings communities is not known. In this review, we sought to better understand the correlation between PFAS exposure rates and the development of immunotoxicity within Washington State populations. We performed a comprehensive literature review that analyzed the development of immunotoxicity with various PFAS toxicity levels and then cross references this data to the known PFAS exposure rates within Washington State. We discovered that exposed populations showed significantly elevated PFAS contaminated blood serum samples which correlated to possible immunotoxicity development, as seen in previous literature. These findings raise significant public health concerns as exposed children may be unknowingly developing vaccine antibody levels below the threshold of protection, putting children at risk for infection and transmission of diseases within their communities. Further biomonitoring and antibody analysis is needed to assess the immunotoxicity severity within PFAS-exposed populations.