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Although the manufacture of polychlorinated biphenyls (PCBs) in the United States ceased in the late 1970s, these compounds remain ubiquitous in the environment and are linked with adverse health effects, such as endocrine disruption, decreased reproductive fitness, reduced immune responsiveness, and inhibition of neurological function. There is some evidence that PCBs adversely impact the cardiovascular system and our previous studies showed embryonic exposure to a coplanar PCB congener in wild birds affected the development of the ventricular wall compact layer, a critical morphological region of the heart, at concentrations that did not impact hatch success. To study the effects of environmentally relevant PCB mixtures on heart development, Japanese quail (*Coturnix japonica*) and broiler chicken (*Gallus domesticus*) embryos were treated with graded doses of PCB mixtures. Both mixtures affected hatching success at higher concentrations. Chicken hatchlings dosed with a 58-congener PCB mixture produced a variety of cardiomyopathies including ventricular hypertrophy, ventricular hypoplasia, abnormal septation, and the most common cardiomyopathy identified: noncompaction of the ventricular wall. Analysis of the Japanese quail hatchling hearts is currently ongoing. The effects noted in these hatchling studies suggest that environmentally relevant PCB mixtures do adversely affect hatch success and cardiac morphology of hatchlings following exposure *in ovo*. The cardiomyopathies identified in PCB-treated chicken hatchlings are consistent with congenital cardiovascular malformations identified in humans, which increase the risk of cardiovascular dysfunction, myocardial infarction, and ultimately contribute to overall heart failure. The conclusions and opinions presented here are those of the authors, they do not represent the official position of any of the funding agencies, the Hudson River Trustees, or the United States.

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