

Nathaniel W. Revis, R. Bull, D. Laurie and C. A. Schiller, "The Effectiveness of Chemical Carinogens to Induce Atherosclerosis in the White Carneau Pigeon", *Toxicology*, Volume 32, Issue 3, Pages 215-227, 1984

The Effectiveness of Chemical Carinogens to Induce Atherosclerosis in the White Carneau Pigeon

NW Revis, R Bull, D Laurie, CA Schiller

Abstract

The frequency of atherosclerotic lesions of the abdominal aorta has been reported to increase significantly in chickens exposed to benzo[a]pyrene and 7,12-dimethylbenz[a,h]anthracene. The present studies were performed to determine in another experimental model frequently used in atherosclerotic studies (i.e. White Carneau Pigeons) whether these and other chemical carcinogens enhance atherosclerosis. The induction and enhancement of atherosclerotic lesions were observed in pigeons treated with 7,12-dimethylbenz[a,h]anthracene, benzo[a]pyrene and 3-methylcholanthrene. The number and size of plaques in the aorta were frequently greater in pigeons treated with the higher concentration (i.e. 100 mg/kg) of these 3 polycyclic aromatic hydrocarbons. Benzo[e]pyrene and 2,4,6-trichlorophenol were ineffective in the induction or enhancement of atherosclerosis in the pigeons. The results of the present and previous studies suggest that the polycyclic aromatic hydrocarbons (excluding benzo[e]pyrene) may be the only potential atherogens in avian atherosclerosis. This relationship may be associated with how these hydrocarbons are transported in the plasma (i.e. by lipoproteins) as demonstrated by the present distribution studies.