Deps, PD; Alves, BL; Gripp, CG; Aragao, RL; Guedes, B; Filho, JB; Andreatta, MK; Marcati, RS; Prates, I; Rodrigues, LC (2008) Contact with armadillos increases the risk of leprosy in Brazil: A case control study. Indian journal of dermatology, venereology and leprology, 74 (4). pp. 338-42. ISSN 0378-6323 DOI: https://doi.org/10.4103/0378-6323.42897

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Background: Armadillos are thought to be a potential source of infection among humans, especially in regions where there is direct contact with them. This study sought to determine if direct exposure to armadillos is a risk factor for leprosy in humans, and to examine the role of indirect exposure, such as through meat consumption.

Methods: A case-control study was conducted in the State of Espírito Santo, Brazil, between 2003 and 2005. Direct contact with armadillos was defined as the owner or caretaker of a pet armadillo, or someone having observed an armadillo in the wild or had handled an armadillo. Cases were defined as patients with leprosy, and controls were defined as patients without leprosy. Contact with leprosy cases or armadillos was an exclusion criterion for both cases and controls. Data were collected using a standardized questionnaire. Leptospira antibodies were measured in cases and controls using a complement fixation test. The control group was matched to the case group for age, sex, and place of birth.

Results: Of the 208 cases and 208 controls, 185 (90%) and 182 (88%) declared contact with armadillos, respectively. Among the cases, 44% reported direct exposure to armadillos, compared to 14% of the controls. The adjusted odds ratio (OR) for direct armadillo exposure was 6.5 (95% confidence interval [CI] 2.4-17.7). Among the controls, 21% reported indirect exposure to armadillos through eating armadillo meat, and 11% reported both eating and handling armadillos. The adjusted OR for indirect exposure was 3.2 (95% CI 1.1-9.3).

Discussion: Direct exposure to armadillos is a significant risk factor for leprosy in humans, and indirect exposure through eating armadillo meat is also a risk factor. The risk associated with direct exposure is twice that of indirect exposure. These findings highlight the importance of direct public health efforts to control leprosy transmission among armadillo populations.

Conclusion: This study provides evidence that direct exposure to armadillos is a more significant risk factor for leprosy in humans than indirect exposure through eating armadillo meat. Further research is needed to understand the mechanisms of transmission between armadillos and humans, and to develop effective public health strategies to reduce the risk of leprosy spread.