

ASSOCIATION OF NEUTERING WITH HEALTH AND WELFARE OF URBAN FREE-ROAMING CAT POPULATION IN ISRAEL, DURING 2012-2014

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'Capture-Neutering by gonadectomy-Return' (TNR) is currently becoming a popular method for controlling free-roaming cat (FRC) populations especially in human habitation. However, data regarding its impact on cat health and welfare are limited. In order to determine the demographic risk factors for FRC morbidity, we followed FRC populations by repeating cross-sectional observations along random transects, in the city of Rishon-Lezion during 2012-2014. Their age status (kitten/adult), contraceptive status (neutered/intact), sex, body-condition-scoring (BCS 1-5/5; 1= emaciation, 5= obesity), skin lesions, and external signs of disabilities and injuries were recorded and analyzed. We fitted a mixed effects generalized linear model (GLMER) to each of the recorded cat-conditions. Overall, 4615 cat-observations were recorded, of which 15% were kittens, 51.2% neutered adults, and of the adults 48.9% females. In comparison to intact adults, kittens had a significantly higher prevalence of emaciation (BCS 1; odds ratio of 4.61, $p < 0.001$) and severe disability or injury (odds ratio of 3.65, $p = 0.0063$). Among adult cats, neutered cats had higher prevalence of obesity (BCS 5; odd ratio 30.6, $p < 0.001$), lower prevalence of skin lesions (odds ratio of 0.51, $p = 0.011$), and close to significant lower prevalence of severe disability or injury (odds ratio of 0.4, $p = 0.068$). However, these neutered adults also had a higher prevalence of permanent disability (e.g. absence of an organ) (odds ratio of 1.67, $p = 0.012$). A higher ratio of neutered FRCs in the geographical surroundings was correlated with a reduced prevalence of emaciated (BCS 1; odds ratio of 0.849 for the increase of 10% neutering ratio, $p = 0.020$) and thin adult cats (BCS 2; odds ratio of 0.94 for the increase of 10% neutering ratio, $p = 0.0085$), among both neutered and intact cats. The results imply that neutering has a favorable effect on FRC health. Such effect can be due to both a direct influence on the neutered cats themselves, as well as to an indirect effect on the general cat population (intact and neutered cats) by reducing competition in the neutered cats. A higher prevalence of permanent disability found for the neutered FRCs does not necessarily represent a higher risk of injury but can rather be attributed to their potentially prolonged lifespan.