Translating Time Across the Lifespan of Felid Species

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Age alignment across felid species is crucial to understand development and disease management of nondomestic felids. Currently, much of the information utilized for nondomestic felid medicine is derived from domestic felid data, which does not always encapsulate unique development and health patterns of nondomestic felids, such as fecundity or chronic kidney disease. By providing detailed information relating to the development and aging processes of felid species, zoos and other institutions holding cats will benefit from precise age alignments across felid species. This is useful to improve preventative care, early disease recognition, and zoological animal welfare. Translating Time (www.translatingtime.org) is a long-term project, which relies on time points (e.g., when permanent maxillary canine erupts), to generate cross-species age alignments. Here, we used 51 time points, which include behavioral milestones (e.g., age of eye opening, age of first walk), bone ossifications, tooth eruptions, and life history milestones across 9 felid species (e.g., domestic cats, cheetahs, lions, tigers). One preliminary observation suggests that some large nondomestic felid species cats may develop at a slower rate than small cats. We fit a linear model with time points in nondomestic felid species as the dependent variable, age of time points in cats as the independent variable, species and the interaction between species and cat time points as factors in the model. Our model accounts for 96% of the variance (df=65, p<0.01). These results demonstrate that we can predict corresponding ages across felid species. These findings have much potential for applications of domestic felid veterinary knowledge to nondomestic felid species. This research will ultimately improve the health management and conservation of species by translating veterinary knowledge across diverse felid species.