

Correlation between Body Mass Dynamics and Weaning in Eurasian Lynx (*Lynx lynx* L, 1758)

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Abstract : Weaning is characterized by the transition from milk to solid food. In some species, such changes in diet are fast and gradual in others. The reasons for the weaning start are understandable. Changes in milk composition and a decrease in maternity behavior push cubs to search for additional sources of nutrients. In nature, females have many opportunities to wean offspring in case of a lack of resources. In contrast in controlled conditions the possibility of delayed weaning exists. The delay of weaning can lead to overspending of maternal resources. In addition, the main causes of weaning end are not so obvious. Near the weaning end behavior of offspring depends on many factors: intensity of maternal behavior, reduction of milk abundance, brood size, physiological status, and body mass. During the pre-weaning period dynamic of body mass is strongly connected with milk intake. It is known that some animals usually wean their offspring when it has achieved body mass in some proportion to the weight of adult animal. In turn, we put forward the hypothesis that decrease in growth rates causes the delay of weaning in Eurasian lynxes (*Lynx lynx*). To confirm the hypothesis, we compared the dynamic of body mass with duration of milk sucking. Firstly, to get information about duration of sucking we visually observed 8 lynx broods from 30 to 120 days postpartum. During each 4-hour observation we registered the start and the end of sucking acts and then calculate the total duration of this behavior. To get the dynamic of body mass kittens were weighed once a week. Duration of sucking varied from $3076,19 \pm 1408,60$ to $422,54 \pm 285,38$ seconds when body mass gain changed from $247,35 \pm 26,49$ to $289,41 \pm 122,35$ seconds. Results of Kendall Tau correlation test ($N= 96$; $p < 0,05$) showed a negative correlation ($\tau = -0,36$) between duration of sucking and body mass of lynx kittens. In general duration of sucking grows in response to decrease in body mass gain with slight delay. In early weaning from 30 to 58 days duration of sucking goes down gradually as does the body mass gain. During the weaning period the negative correlation between sucking time and body mass becomes tighter. Although throughout the weaning consumption of solid food begins to prevail over the milk intake, the correlation persists until the end of weaning (90-105 days) and after it. In that way weaning in Eurasian lynxes is not a part of ontogenesis controlled only by maternal behavior. It seems to be a flexible process influenced by various factors including changes in growth rates. It is necessary to continue investigations to determine the critical value of body mass which marks the safe moment to stop milk feeding. Understanding such details of ontogenesis is very important to organize procedures aimed at the reproduction of mammals *ex situ* and the conservation of endangered species.

Keywords : body mass, lynx, milk feeding, weaning

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