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The postnatal growth and physical development of fat-tailed gerbils *Pachyuromys duprasi* in the laboratory colony)

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Data on postnatal growth and development provide basic information for integrative studies and zoo and laboratory management of animals. In the laboratory colony of fat-tailed gerbils *Pachyuromys duprasi* of Moscow Zoo, we examined 40 (17 male, 23 female) pups from 11 litters from birth to 40 days of age for traits of physical development. For comparison, an independent sample of 20 adults (10 males, 10 females) has been examined by the same variables as pups. Litter size varied from 2 to 6 (average 4.00 ± 1.34) pups. The average neonate body mass (2.58 ± 0.45 g) comprised 4.3% of the average adult body mass (60.0 ± 24.3 g). The average neonate body length was 36.22 ± 1.85 mm, head length 14.06 ± 1.01 mm, tail length 8.84 ± 0.68 mm and foot length 6.17 ± 0.43 mm. The upper incisors erupted at 13.5 ± 1.7 days. At 16 days, pups walked at four feet. The hind leg fingers had separated at 21.4 ± 3.0 days. The eyes had opened at 23.7 ± 0.9 days. The ear channel had opened at 27.2 ± 1.2 days. The average body mass gain was 0.491 g per day in the first 10 days of age, 0.498 g per day between 11 and 20 days of age, and 0.421 g per day between 21 and 40 days of age. At 40 days, pup body mass (20.02 ± 4.7 g) was 33.0% of adult body mass, whereas body length (76.6 ± 3.9 mm) was 79.1% of adult body length. The body mass gain and the physical growth did not differ between sexes. Cross-correlation of body mass and body size values revealed periods of coordinated and uncoordinated growth of different body parts. The body mass gain ($F_{1,147} = 42.5$, $p < 0.001$) and the increase of the length of body ($F_{1,147} = 31.8$, $p < 0.001$), head ($F_{1,147} = 10.5$, $p = 0.001$), tail ($F_{1,147} = 35.0$, $p < 0.001$) and foot ($F_{1,147} = 15.1$, $p < 0.001$) were significantly faster in pups from small litters (2–3 pups, 5 litters) compared to pups from large litters (4–6 pups, 6 litters). Compared to other species of gerbils, development of fat-tailed gerbils goes at slower speed. Support: the Russian Science Foundation, grant 14-14-00237.