

LONGITUDINAL CHANGES IN BODY LENGTH, BODY MASS AND REPRODUCTIVE OUTPUT IN RELATION TO AGING IN PROVISIONED, FREE-RANGING JAPANESE MACAQUE FEMALES

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My goal in this study is to investigate changes in body length, body mass and reproductive output in relation to aging in female primates. Though some studies have examined reproductive senescence, there were few studies that investigated changes in both reproductive output and body size in relation to aging. My study subjects were provisioned, free-ranging Japanese macaque (*Macaca fuscata*) females at Takasakiyama, Japan. Without having to capture, I collected data on body length using photogrammetry and on body mass with a spring-dial scale on a longitudinal basis for 4 to 30 year-olds between 1997 and 2009. The sample sizes were 196 female-years from 56 females for body length and 223 female-years from 64 females for body mass. I calculated age-specific birth rates using 514 female-year-data between 2001 and 2009. I found that body length increased until about 13 years and did not change evidently thereafter. Although there was no clear tendency between age and body mass from full-grown, around 10 years, to 18 years, it decreased clearly after 18 years of age. Among focal animals, the earliest births were by 5 year-old females. Birth rates were 40 % or more between 8 and 23 years, 6.7 % in 24, 7.7 % in 25 and 0 % in females aged 26 years or more. Thus, the decrease in body mass preceded the decrease in birth rates and changes in body length were not clear. These tendencies were verified also from analyses based on each individual.

Keywords: longitudinal change, body length, body mass, birth rate