Spontaneous foetal movements reflect the development of the foetal nervous system. Studies on foetal motility have been performed in a few species particularly in the human foetus. This ultrasonographic study describes the onset and frequency of foetal movements in the guinea pig, a precocious species.

After a pilot study was performed to establish procedures for repeated scanning of guinea pigs, privately kept animals were scanned (7.5 or 5.0 MHz convex transducer) at 2-4 day intervals between day 24 and 63 after mating. Within every scanning session two selected foetuses were each scanned for 15 min. Videorecordings of the scans were analyzed off line for incidence and quality of different foetal movement patterns. Recordings were finally re-analyzed for the quantification of four specific movement patterns. Altogether 22 different movement patterns could be characterized, of which 6 occurred only temporarily. The very first foetal movement was observed on day 24 gestational age and subsequently, between days 24-33, all other movements, except one, developed. Quantitative analysis of 3 specific movement patterns, the General movements, Sideway bendings, foetal breathing and periods of foetal rest revealed specific patterns of incidence during the course of pregnancy. Incidence of Sideway bendings increased rapidly between day 24 and day 30 and declined hereafter. Incidence of General movements and foetal breathing increased during mid pregnancy and declined towards parturition. Incidence of foetal rest was almost 100% around day 24, decreased to 60 % at mid gestation, and increased again to a mean value of 90% towards parturition. These data can now serve as reference values for future studies on spontaneous, or pharmacologically evoked, abnormal foetal development.