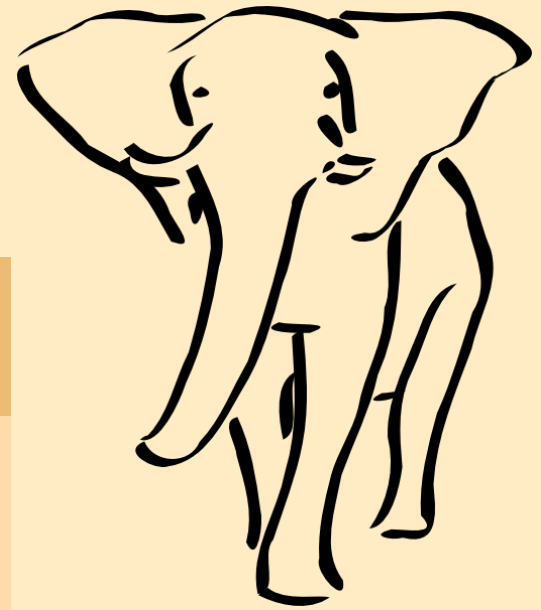


COMPARATIVE SLEEP SCIENCE

AFRICAN ELEPHANTS

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SLEEP TIMING & DURATION

Literature suggests that African Grey elephants are largely *nocturnal*, sleeping mainly in the night, and *polyphasic*, sleeping for roughly 5 episodes per day.

African elephants tend to engage in major sleep episodes between 22:00-07:00, typically awaking at around sunrise (04:30-07:00).

On average, early studies suggest that the daily sleep duration of African elephants is between 3.10-6.90 hours a day. However, more recent observations of wild elephants not only show that this duration may be as short as 2 hours per day, but also that they can regularly go up to 46 hours without sleeping. It is postulated that captive elephants sleep for longer as there is no need to gather food and a negligible predation risk. Moreover, in a similar fashion to other mammals, sleep duration in African elephants has been negatively correlated with body mass.

SLEEP LOCATION & POSTURE

African elephants have been observed to typically sleep together as a herd in novel locations each night. Researchers have found that their choice of location is not associated with a specific preference for vegetation type in the surrounding area. Wild African elephants have been observed to sleep in environments ranging from lacustrine woodland, deep sand woodland, dense woodland areas and open savanna.

Examinations of African elephants have revealed that they sleep in both an upright position, and in a recumbent position. Typically, African elephants sleep standing up the majority of the time, and only sleep laying down for roughly 17 minutes every 3-4 days. This is not affected by the amount of activity or exertion between sleeps.

BACKGROUND & TAXONOMY

KINGDOM: Animalia

PHYLUM: Chordata

CLASS: Mammalia

ORDER: Proboscidea

FAMILY: Elephantidae

SUBFAMILY: Elephantinae

GENUS: *Loxodonta*

SPECIES: *Loxodonta africana*

Population: ~415,000

Location: Sub-Saharan Africa

Status: Endangered

STAGING INFORMATION

The thick skulls of African elephants prevent effective EEG usage, meaning it is difficult to determine their sleep staging. Research suggests that elephants are only able to enter non-REM sleep when they sleep upright, and therefore, REM (characterized by muscle atonia) is only

achieved every 3-4 days during periods of recumbent sleep. It has been hypothesized, however, that African elephants may engage in daily REM sleep in short bursts, lasting a matter of seconds. In spite of this speculation, definitive evidence of REM sleep in elephants is yet to be established.

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