

## **Why does menstruation cycle synchronize with moon cycle?**

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### Abstract

Primates and bats are mammals with menstruation cycle. The menstruation cycle is around 28-35 days in most primates. The cycle is synchronizing with moon period. Why does menstruation cycle synchronize moon cycle? Here, I propose that the phenomenon is because primates and bats need to increase the change of fertilization. Primates as well as bats can stand with two legs or hang with two legs. In majority of time, they maintain the straight position of their bodies. In this position, sperms will need swim against gravity toward Fallopian tube after intercourse. They will need to take 1-12 hours to meet the oocytes. Straight body position will increase the difficulty to let sperms to meet oocytes. Thus, gravity force can affect the chance of fertilization. Moon is the major source of tidal force. The moon cycle will affect the magnitude of gravity force. Thus, primates and bats evolve menstruation cycles to let the ovulation occur during the less-gravity period. So, menstruation cycle is synchronizing the moon cycle. That is the reason why primates and bats, not other mammals, have menstruation cycles.

### Main text

Besides primates and bats, most mammals do not have menstruation periods. The menstruation period is about 28-35 days for most primates. This period is about the cycle of moon. Several previous studies point out the locking between lunar cycle and menstruation period. Moon provides tidal force to affect the gravity strength on earth. Here, I propose that menstruation period is evolved to overcome gravity force to facilitate fertilization in primates and bats, so it synchronizes with moon cycle.

Primates are the mammals who can stand up with two lower legs. They can maintain this upright position during daily activity. Bats can hang to sleep with two lower legs. They also maintain the straight position for a long time. Why is there menstruation cycle for primates and bats is a puzzle. Why evolution lets primates and bats to have menstruation cycle. The reason is the enhance the rate of fertilization. After intercourse, sperms usually take 1-12 hours to enter the Fallopian tube to meet oocytes for fertilization. During the long period of time with upright body position, it is important to account for gravity force to affect the sperm swimming from lower

body position to higher body position in the Fallopian tube. Thus, lower gravity force will enhance the fertilization rate for sperms to meet the oocyte. Our moon is spinning and orbiting in a period about one month. The moon cycle will have tidal influence to affect gravity on earth. The moon cycle is related to the periodic change of lowest gravity to strongest gravity. In order to combat the gravity influence on fertility, primates and bats standing or hanging with two legs evolve the menstruation cycle to synchronize the moon cycle. That is the reason why primates and bats, not other mammals, have menstruation cycles and these cycles are synchronizing with the moon cycle.

#### References

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