

Aim

Determine the olfactory detection threshold of spider monkeys for six different predator odors.



Conclusion

✓ Spider monkeys have a well developed sense of smell in their ability to detect predator odors.

✓ The individual variation in the ability to detect the different predator odors may be explained



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Olfactory sensitivity
of spider monkeys
(*Ateles geoffroyi*) for
predator odors.



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Introduction

The sense of smell is not only important in the role of social behaviors and the location of food, but also in predator detection for many mammalian species.

In the wild the ability to detect predators is vital for the increased chance of survival for prey species. Spider monkeys are a relatively large bodied mammal and have only a few natural predators in the wild.

When it comes to the sense of smell it has traditionally been believed that primates mainly rely on their visual sense and are believed to have a poor sense of smell.

Results

- ✓ All animals were highly sensitive to the six predator odors tested.
- ✓ There was an individual variation in the olfactory detection threshold for the six predator odors.

Olfactory detection thresholds for each of the six odorants, expressed as liquid dilution and parts per million (gas phase concentration).

Mustelid Odors	Liquid Dilution	Ppm
1	1:10 ⁶ 1:10 ⁹	0.026 0.000026
2	1:3* 10 ⁴ 1:10 ¹³	0.87 0.0000000026
3	1:3* 10 ⁷ 1:3*10 ⁹	0.0012 0.000012
Feline Odors	Liquid Dilution	Ppm
4	1:10 ⁷ 1:10 ⁸	0.00019 0.000019
5	1:10 ⁷ 1:3* 10 ⁸	0.0062 0.00021
6	1:10 ⁵ 1:3* 10 ⁸	1.47 0.00049

Materials and methods

A food rewarded two-choice conditioning paradigm were used on five adult spider monkey females to investigate their olfactory detection threshold for six predator odors.



Odorants

Mustelid Odors

- 1 - 2-propylthietane
- 2 - 3-methyl-1-butanethiol
- 3 - 2,2-dimethylthietane

Feline Odors

- 4 -3-mercapto-3-methylbutan-1-ol
- 5 -3-mercapto-3-methylbutyl formate
- 6 - methyl-2-phentyl-ethyl sulfide