

**Table S1.** Survey questions

---

**Signalment questions**

1. What is your gender?
2. What breed of dog/dogs do you own, possibly non-purebred?
3. What is the dog's age?
4. At what age was your dog castrated?
5. Reasons for castration:

*Select all answers that apply:*

- a) roaming
- b) aggression
- c) health problems
- d) disease prevention
- e) birth control
- f) hyperactivity
- g) mounting
- h) marking
- i) personal conviction regarding castration
- j) other

**Questions related to aggression**

6. Was your dog aggressive towards people before castration?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

7. Was your dog aggressive towards other dogs before castration?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

8. Was your dog aggressive towards other animals (other pets, etc.) before castration?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

9. Is the dog still aggressive towards people?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

10. Is the dog still aggressive towards other dogs?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

11. Is the dog still aggressive towards other animals (other pets, etc.)?

*Possible answers:*

- a) yes
- b) no
- c) sometimes

**Questions related to anxious behaviors**

12. Did your dog present with anxious behaviors (e.g. hiding, freezing, running away, fear aggression, etc.) before castration?

*Possible answers:*

- a) yes
- b) no

13. If so, what were they?

14. Does your dog still present with anxious behaviors (e.g. hiding, freezing, running away, fear aggression, etc.)?

*Possible answers:*

- a) yes
-

---

b) no

15. If so, what are they?

**Questions related to roaming**

16. Did your dog have a tendency to roam before castration?

*Possible answers:*

a) yes

b) no

17. Does your dog still have a tendency to roam?

*Possible answers:*

a) yes

b) no

**Questions related to mounting**

18. Did your dog have a tendency to mount before castration?

*Possible answers:*

a) yes

b) no

19. Does your dog still have a tendency to mount?

*Possible answers:*

a) yes

b) no

**Questions related to over-marking**

20. Did your dog have a tendency to over-mark objects before castration?

*Possible answers:*

a) yes

b) no

21. Does your dog still have a tendency to over-mark objects?

*Possible answers:*

a) yes

b) no

**Questions related to dog's activity**

22. Before castration, how would you rate your dog's activity levels?

*Possible answers:*

a) lethargic

b) somewhat active

c) moderately active

d) active

e) hyperactive

23. How would you rate your dog's activity levels at present?

*Possible answers:*

a) lethargic

b) somewhat active

c) moderately active

d) active

e) hyperactive

---