



## Research Summary: Evaluation of the effects of a nutrient- enriched water supplement in healthy domestic cats in Europe (Colliard et al. 2019)<sup>1</sup>.

### Introduction

Different studies have evaluated the effects of nutrient-enriched water (NW) intake on measures of cat hydration. For instance, Zanghi B.M. et al. (2017)<sup>2</sup> and Wills-Plotz et al. (2019)<sup>3</sup>, evaluated the effects on hydration measures in two groups of cats offered either NW or tap water (TW). Results from Zanghi B.M. et al. (2017)<sup>2</sup> showed increased water intake (27%) and urine

osmolality (12.5%) while similar results were obtained by Wills-Plotz et al. (2019)<sup>3</sup>, concluding that cats that drank NW showed improved measures of hydration.

In the present study a similar formula of NW was evaluated, measuring hydration parameters.

### Study design

The study consisted of monitoring 22 cats during a 23-day study. Cats were fed PURINA® PRO PLAN® Cat (PPC) Sterilized rich in salmon and had free access to tap water and nutrient-enriched water, if given (Figure 1).

For 7 days cats were transitioned to the study food (PPC Sterilized) in order to allow a proper digestive adaptation period. From day 1 to 11, the called pre-test phase took place and all cats were weighed to obtain body weight measures (BW) and feces were collected for further analysis. From day 1 to 8, cats were fed with their Maintenance Energy Requirement (MER) amount and on day 9, *ad libitum* feeding was put in place. Urine samples were collected on days 10 and 11 and multiple parameters were evaluated.

On day 12 the cats were divided into 2 groups and fed back according with MER pattern for the rest of the study in order to characterize possible differences in hydration between groups. Test phase was comprised from day 13 to 23, where the test group was offered 36ml/kg BW of NW beverage in two separate services per day and free access to TW, while the control group had TW as their only drinking source. Cats were weighed on day 13, feces were collected from day 17 to 20 and urine parameters were evaluated from day 21 to 23.

Total water intake was evaluated for each group by adding the water ingested from food (moisture 5.37%) tap water and NW (moisture 95.3%) when given.

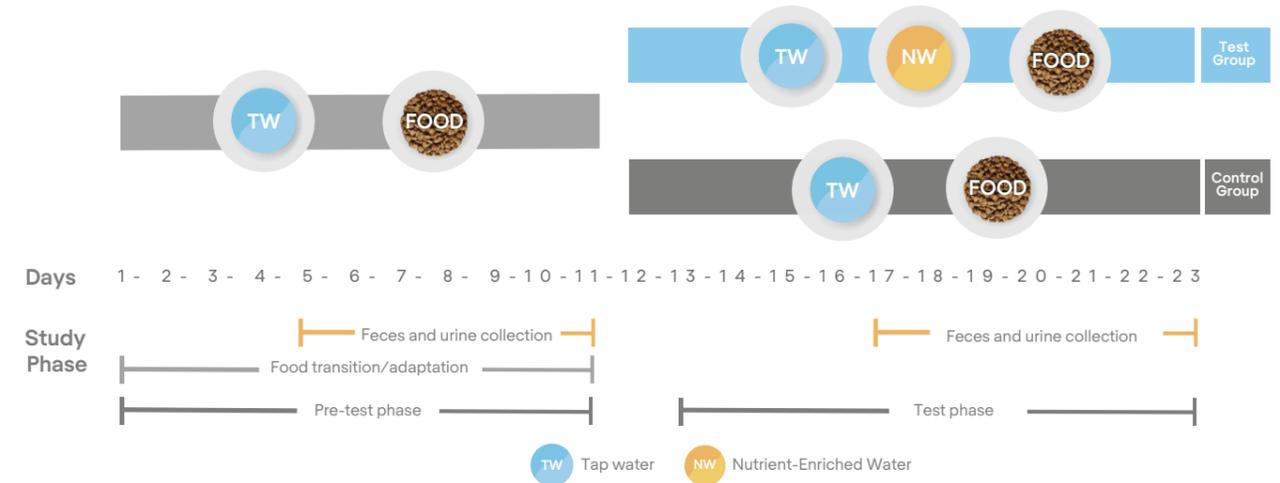


Figure 1. Timeline describing feeding and timing protocols for the study design.

### Results

The hydration study showed that:

- Total water intake increased by 27% in the test group (test group: 32.8 mL/Kg BW/day; control group: 26.0 mL/Kg BW/day).
- Urine specific gravity was significantly lower in the test group vs control group (test group: 1.056 g/mL; control group: 1.063 g/mL).
- Urinary osmolality decreased by 12.5% in the test group compared with the control group.

### Conclusions

The consumption of NW significantly increased the total water intake and urine dilution, when considering the osmolality and specific gravity.

1. Colliard et al. (2019): Nestlé Internal Report. Feline hydration supplement.  
 2. Zanghi B.M, Gerheart L, Gardner C.L., (2018): Effects of a nutrient-enriched water on water intake and indices of hydration in healthy domestic cats fed a dry kibble diet. From Nestlé Purina Research. American Journal of Veterinary Research 79(7):733-744.  
 3. Wills-Plotz E, DeGeer S, Zanghi B.M. (2019): Nutrient-enriched water supplements nutritionally support hydration in the domestic cat. From Nestlé Purina Research. 2019 ACVIM Forum Research Abstract Program.