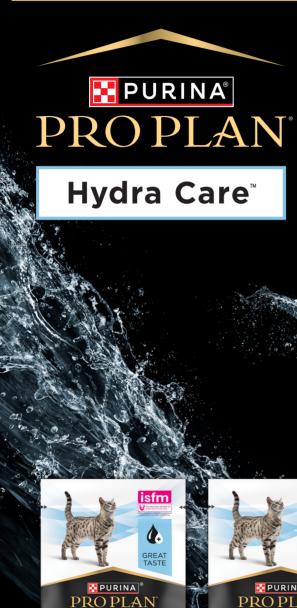
SCIENCE DRIVEN HYDRATION

PRO PLAN[®] Hydra Care[™].

A daily complementary cat food to help promote liquid intake in cats - proven to increase cat's liquid intake and urine dilution*



Hydra Care^{*}

FELINE HYDRATION

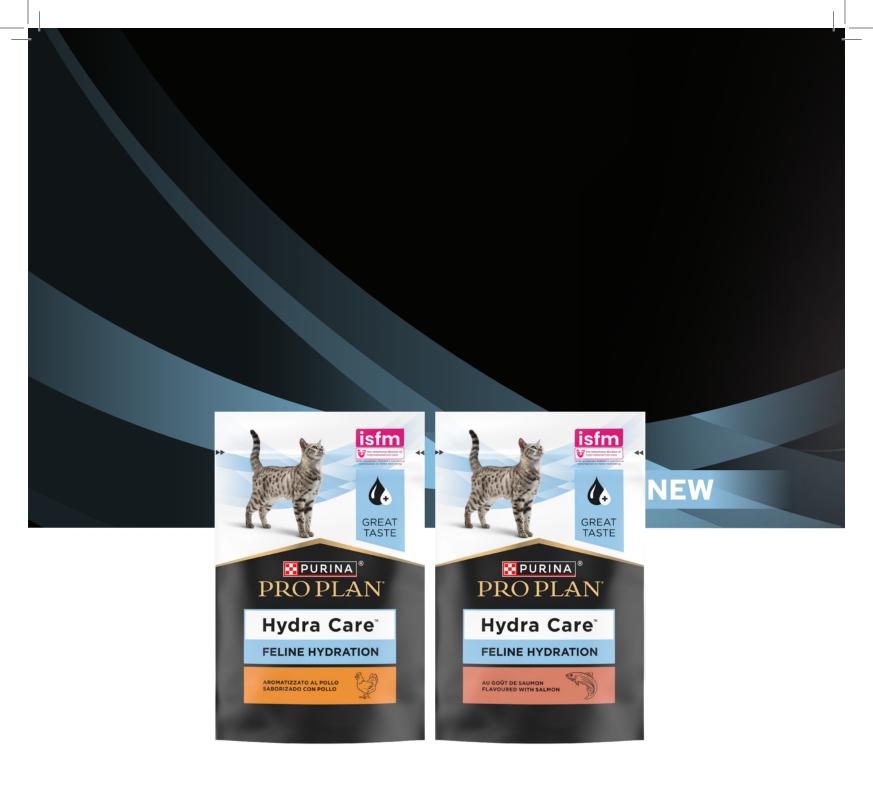
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AROMATIZZATO AL POLLO SABORIZADO CON POLLO PRO PLAN Hydra Care FELINE HYDRATION

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*Compared to cats consuming only water in addition to dry feeding. Cats must consume at least 25mL/kg of bodyweight daily for benefit.



Introducing PRO PLAN[®] Hydra Care[™], a nutrient enriched water which can be an effective strategy for improving hydration in cats. This daily complementary cat food has been created to help cats consume on average 50% more liquid every day than water alone* and so increase urine dilution. These effects may offer benefits to cats in need of greater water consumption for their overall health. For example, PRO PLAN[®] Hydra Care[™] can help support urinary and renal health.



The importance of feline hydration

Water is vital to life and it is considered an essential nutrient because it supports a multitude of physiological functions including metabolic regulation and elimination of waste products through the kidneys. For that reason, correct hydration is necessary in order to maintain a proper equilibrium of **electrolytes**, **minerals and fluids** within the body¹.

Cats are poor drinkers due to their natural behaviour, as cats have a low thirst stimulus, and consequently, they produce very concentrated urine. These adaptations might trigger long-term health implications, like increased risk of suffering kidney or urinary issues, such as urinary stones or Feline Idiopathic Cystitis (FIC)². Even more, providing a correct **hydration** might represent a challenge for the pet owners not only because cats are naturally poor drinkers but because they are also very sensitive to the taste of water and the type of bowl used to serve it. Moreover, in some specific situations, as in cats suffering from **FLUTD**, may be beneficial from a greater liquid intake and urine dilution³.

Therefore, increasing cats' liquid intake should be considered as a key factor to reach a correct level of hydration, together with a healthy diet and a proper environmental management.

1. Stanton C.A, et al., (1992): Bioelectrical impedance and zoometry for body composition analysis in domestic cats. American Journal of veterinary Research, 251-57. 2. Buckley C.M.F, et al., (2011): Effect of dietary water intake on urinary output, specific gravity and relative supersaturation for calcium oxalate and struvite in the cat. British Journal of Nutrition, 106, SI28-SI30.

^{3.} Brian M. Zanghi, (2017): Water need and hydration for cats and dogs. Nestlé Purina Comp Anim Nutr summit. Proceedings, 15-23.

Introducing a third bowl as a simple solution

PRO PLAN[®] Hydra Care[™]

is a complementary pet food and offers a tasty, soft textured gravy which is served on its own, as an extra third bowl without substituting water or food.

The formula will engage cats to happily lick it up due to its great taste, increasing their total water intake* and decreasing urine specific gravity and osmolality.

- Shake well before feeding
- Feed 1 pouch per each 2kg of body weight
- 16 kcal (chicken) / 19 kcal (salmon) per pouch

Ingredients

Chicken variety: Milk and milk derivatives*, glycerol, meat and animal derivatives (Chicken 0.5%), various sugars, minerals.

Salmon variety: Milk and milk derivatives*, glycerol, fish and fish derivatives (Salmon 1%), meat and animal derivatives, various sugars, minerals. *whey protein powder









PRO PLAN[®] Hydra Care[™] makes the difference

The addition of PRO PLAN[®] Hydra Care[™]

to the cat's diet can increase the consumption of water intake. These effects may offer health benefits to cats in need of greater water consumption for their overall health.

KEY NUTRIENT VALUES*		
	Chicken	Salmon
Moisture	94.50%	93.50%
Protein	3.20%	3.90%
Fat	0.20%	0.30%
Crude ash	0.20%	0.40%
Crude fibre	0.05%	0.05%
Calcium	0.00%	0.05%
Magnesium	0.00%	0.00%
Phosphorus	0.01%	0.04%
Chloride	0.03%	0.04%
Sodium	0.02%	0.03%
Metabolisable energy (ME) ¹	218 kcal/kg	256 kcal/kg



Recommended for

- Cats who would benefit from additional water intake
- Helps support renal health
- Helps support urinary health

* Typical analysis in the final product as fed. ¹ Calculated following NRC 2006 equations.

Key Benefits Shown to increase total water intake and promote hydration** INCREASED LIQUID INTAKE Help to Increase urine dilution **URINE DILUTION** Great taste **GREAT TASTE** **Compared to cats consuming only water in addition to dry feeding. Cats must consume at least 25 ml/kg of bodyweight daily for benefi

The science behind Nutrient-Enriched Water

Multiple studies have shown the benefits of providing cats with Nutrient-Enriched Water. The products used in the following studies ^{4,5,6,7} have similar properties to PRO PLAN[®] Hydra Care[™].

Introduction

While healthy cats are able to self-regulate the total water they require through drinking, a difference in the daily water-to-calorie intake ratio is observed depending on the type of food ingested. In general terms, cats drink less water when fed dry food, whereas when eating wet food, they ingest water through dietary moisture instead. These differences in water consumption may be relevant in cats suffering from **Lower Urinary Tract Disease (LUTD)** who would benefit from an increased total water intake and urine output⁵.

Different studies have evaluated the effects of **nutrient-enriched water (NW)** intake on measures of hydration. For instance, cats undertaking a dental cleaning, which required anesthesia, showed a significant increase (0.9%) of **total body water (TBW)** prior to intervention, when they were offered to drink **NW** compared to cats drinking only **tap water (TW).** After the procedure, **NW** cats appeared to be equally hydrated compared to cats administered **intravenous (IV) fluids** during the anesthesia or better hydrated in the case of no **IV** administration⁶.

We present three additionally studies^{4,5} which evaluated the effects of drinking **NW** on water intake and **indices of hydration** in healthy domestic cats fed with a dry kibble diet ad libitum.

Methodology

The main study in the field was carried out by Zanghi B.M. et al. (2017)⁴. It consisted of monitoring 18 healthy adult domestic shorthair cats fed ad libitum dry diets for 56 days. Firstly, during a one-week baseline period, all cats were offered TW as their only water source. Following the baseline week, 9 cats were offered only NW for 10 days and afterwards, were offered both TW and NW in separate bowls and alternating locations, until the end of the study. The remaining 9 cats were offered only TW during the whole length of the study (Figure 1). Blood and urine samples were collected, and gualitative magnetic resonance imaging was performed to assess total body water, lean body mass and fat mass at intervals throughout the study.

In an internal Nestlé study⁷ that consisted on monitoring 24 healthy adult domestic cats randomized into two groups: control group was offered food + ad libitum tap water. The other group was offered, in addition to control group, a bowl with **NW** in quantity of 36mL/kgBW/d for 11 days. Water intake, urine parameters (volume, pH, specific gravity, osmolality, RSS), and feacal parameters were recorded at the end of each period.

For further evaluation in a complementary study run by **Wils-Plotz et al. (2019)**⁵, two similar **NW** differing only in the gum content to influence liquid viscosity were analysed.

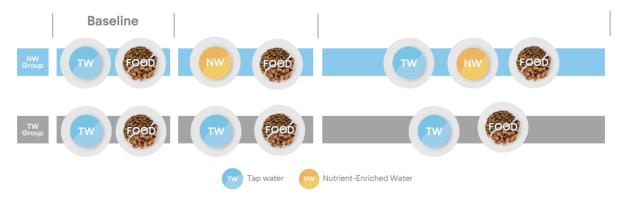


Figure 1. Graphical representation of the studies methodology.

4. Zanghi B.M, Gerheart L, Gardner C.L, (2017): 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.

5. Wils-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.

6. Zanghi B.M, McGivney C, Eirmann L, Barnes M. (2019): Hydration measures in cats during brief anesthesia: intravenous fluids versus pre-procedure water supplement ingestion. From Nestlé Purina Research. 2019 ACVIM Forum Research Abstract Program.

7. Internal Purina Study, St. Joseph, 2020.

Results

In the first study⁴, cats offered both **TW** and **NW** preferentially drank **NW**, and the higher liquid intake maintained a more dilute urine over the 2-months (**Figure 2**). Urine parameters were affected reflecting a greater hydration status such as decreased urine specific gravity (33% lower); decreased urine osmolality (30% lower); light urine colour; and lower urinary concentration of phosphate, creatinine and urea nitrogen relative to baseline.

The results from the Nestlé internal data⁷ demonstrated that the consumption of NW significantly increased the total liquid intake by 50% in mL/d (144.3 and 215.6 mL total liquid/d in the control group vs the test group, respectively).

- Leads to a significant 43.7% decrease of urine osmolality in the test group (3293 mOsm/kg and 1855 mOsm/kg in the pre-test and test periods respectively).
- Significantly decreased the urine osmolality in the test group vs the control group (1855 mOsm/kg and 2964 mOsm/kg, respectively).
- Decreased significantly the urine specific gravity in the test group (1.065 and 1.038 g/mL in the pre-test and test periods respectively).

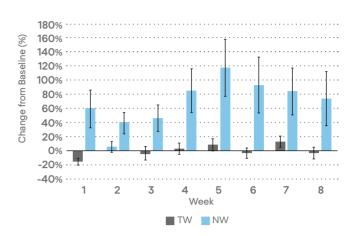
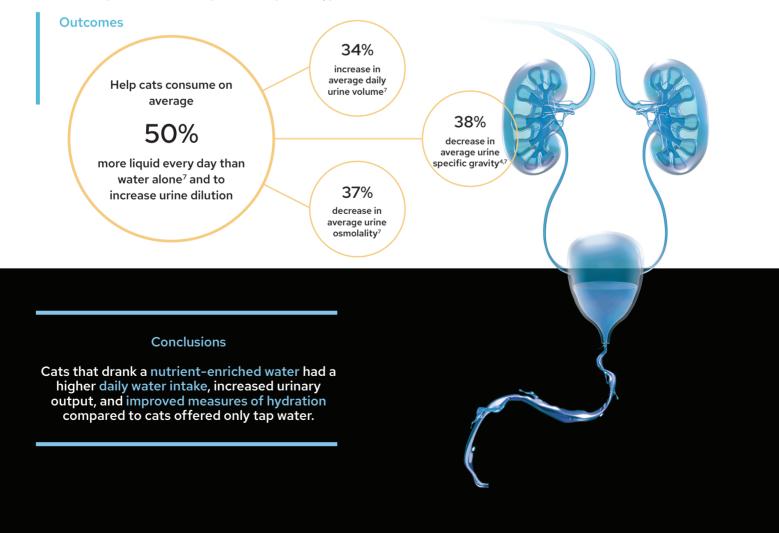


Figure 2. Mean weekly liquid intake (vs. baseline). Tap (TW) vs Nutrient Enriched water (NW).

Results obtained in the complementary study⁵, concluded that both types of **NW**, regardless of gum content, increased similarly to the **total daily liquid intake (40.5 and 38.8 mL/kg BW/d, respectively)** compared with cats drinking only **TW (25,7 g/kg BW/d)**, and significantly improved urine measures of hydration.









Please contact your PURINA[®] representative or visit www.vet-center.eu/eu for more information.

