# A dental chew containing L-theanine (VEGGIEDENT® Zen) can help relax dogs when given before a stressful event: a double-blinded, cross-over study

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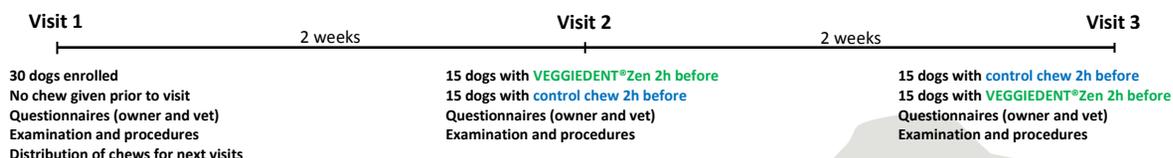3. Virbac Global Medical Department, Carros, France

## Introduction

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The new VEGGIEDENT® Zen (Virbac, Fort Worth, USA) is a dental chew combining the features of a dental chew (VEGGIEDENT® FR3SH™, Virbac, Fort Worth, USA) with the addition of L-theanine, known to support relaxation[1].

This dental chew helps to control plaque and tartar formation[2], reduce bad breath[3], and should help the dog to relax thanks to L-theanine.

In order to assess the relaxing effect of VEGGIEDENT® Zen, a double-blinded, cross-over and controlled study was performed on 30 owner's dogs prone to stress during visits to the veterinarian.

## Material and methods

**Visit 1** — 2 weeks — **Visit 2** — 2 weeks — **Visit 3**

**Visit 1**
30 dogs enrolled
No chew given prior to visit
Questionnaires (owner and vet)
Examination and procedures
Distribution of chews for next visits

**Visit 2**
15 dogs with VEGGIEDENT®Zen 2h before
15 dogs with control chew 2h before
Questionnaires (owner and vet)
Examination and procedures

**Visit 3**
15 dogs with control chew 2h before
15 dogs with VEGGIEDENT®Zen 2h before
Questionnaires (owner and vet)
Examination and procedures

Design of the double-blinded, cross-over study: 30 owner's dogs prone to stress during visits to the veterinarian were selected for this study and randomly allocated into 2 groups (see scheme above), according to the chew they received first (VEGGIEDENT® Zen or the control chew without L-theanine: VEGGIEDENT® FR3SH™).

During the visits, the owner and veterinarian (for events at the clinic) had to fill out a questionnaire concerning the behavior of the dog to get a general stress score (based on 19 different behavioral signs scored from 0 to 5) and an anxiety score (0 - 5) during four events: 1 - car ride to the clinic (owner evaluation); 2 - visit and exam (owner + vet); 3 - procedures (blood pressure, heart rate, sham injection – owner + vet) and 4 - car ride back home (owner).

Procedures included measures of blood pressure (SunTech Vet25 Veterinary Blood Pressure Monitor - SunTech Medical®) and heart rate and sham injection.

A paired Student's t-test or a non-parametric sign test was used to compare the values obtained in the different conditions. Difference was determined as significant for $p$-value $< 0.05$.

## Results

The results with significant differences are presented in the table and figure below.

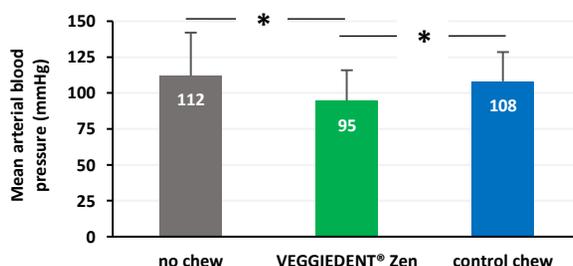| | | | No chew (n = 27) | VEGGIEDENT® Zen (n = 26) | Control chew (n = 26) |
|---|---|---|---|---|---|
| General stress score [0 – 95] | Owner evaluation | During car ride back home | 13,6 ± 10.5 | 9,5 ± 8.3* | 11,2 ± 12.6 |
| | Vet evaluation | During visit and exam | 37,7 ± 12.6 | 27,8 ± 14.3* | 26,4 ± 13.7* |
| | | During procedures | 37,3 ± 11.4 | 26,3 ± 13.7* | 24,8 ± 12.7* |
| Anxiety score [0-5] | Owner evaluation | During procedures | 3,5 ± 1.3 | 2,6 ± 1.3* | 2,6 ± 1.5 |
| | Vet evaluation | During visit and exam | 3,8 ± 0.9 | 3,1 ± 0.9* | 2,8 ± 1.0* |
| | | During procedures | 3,9 ± 0.8 | 3,0 ± 0.8* | 3,0 ± 1.1 |

\* $p < 0.05$ compared to no chew

VEGGIEDENT® Zen™, given 2h before the visit to the veterinarian could **reduce some signs of stress and the dog's general anxiety,** as assessed by the owner and the vet, during and after the visit.

The **blood pressure was also significantly reduced** when VEGGIEDENT® Zen™ was given to dogs compared to the visits when no chew or the control chew was given prior to the visit.

These data are consistent with the relaxing effect of L-theanine observed in other studies in pets[1,4].

**Mean arterial blood pressure of dogs during the visit to the vet, 2 h after taking the chew (or no chew)**



Bar chart of mean arterial blood pressure (mmHg): no chew = 112, VEGGIEDENT® Zen = 95, control chew = 108.

*p<0.05 between conditions

## Conclusion

**VEGGIEDENT® Zen, a dental chew with L-theanine, can help relax the dog when given 2h before a stressful event.**

1. Dramard V et al. Effect of l-theanine tablets in reducing stress-related emotional signs in cats: an open-label field study. Ir Vet J. 2018;71:21.  2. Clarke DE et al. Effectiveness of a vegetable dental chew on periodontal disease parameters in toy breed dogs. J Vet Dent. 2011;28(4):230-5.  3. Chala V et al. Evaluation of breath freshening effect in dogs following chew administration: an open field trial. Voorsjaardagen congress, The Hague, NL, April 2018.  4. Araujo JA et al. Anxitane tablets reduce fear of human beings in a laboratory model of anxiety-related behavior. J Vet Behav 2010;5:268-75

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