



# Research of the Effect of Environmental Modification Techniques on Diet with Medium Chain Triglyceride Molecules in the Treatment of Canine Cognitive Dysfunction

**Hilal KURUM**

0000-0003-1394-7984

**BURSA ULUDAĞ UNIVERSITY**  
**GRADUATE SCHOOL OF HEALTH SCIENCES**  
**Veterinary Internal Medicine DEPARTMENT**  
**PhD PROGRAM**  
**GRADUATION DATE: 03.10.2023**

## SUPERVISOR

Prof.Dr. Ebru Yalçın  
0000-0002-6697-6079  
BURSA ULUDAĞ UNIVERSITY  
GRADUATE SCHOOL OF HEALTH SCIENCES  
Veterinary Internal Medicine DEPARTMENT  
BURSA – TÜRKİYE



## THESIS ABSTRACT

This research is based on the comparison of results in the cognitive dysfunction diagnostic scale by administering medium chain triglyceride (MCT) supplemented diet with multimodal environmental modification techniques (MEMO) in the treatment of canine cognitive dysfunction (CCD).

In the study, 20 dogs of different age, breed, gender and body weight, who were over 8 years old were used. The study has been classified according to the "Canine cognitive dysfunction syndrome rating scale" rating system. Patients with cognitive dysfunction behavioral criteria (DISHAA) were included in the clinical examination for differential diagnosis. Patients with CCD who scanned a full examination and had healthy according to the laboratory results (hemogram, serum biochemical panel, acute phase proteins, cortisol) were divided into 2 different treatment groups. A prescription diet with MCT (6.5%) as a treatment for group I, and the conditions determined for MEMO were applied together with the diet for group II. All evaluations were done again after 30 days of treatment.

Results of the study revealed that; in the first group, scores in 5 categories from 6 DISHAA categories except disorientation, and in the second group, all 6 DISHAA categories were statistically significantly lower ( $p < 0.05$ ) at the end of 30 days. On the last day of treatment; social relations and interaction, activity, and anxiety scores in the second group compared to the first group; the total CCD scoring observed in this study was statistically significantly lower in the second group compared to the first group at the end of the treatment. Serum cortisol values were found to be statistically significantly lower in the second group compared to the first group on the 30th day. No statistically significant difference was observed in hemogram, serum biochemical panel and acute phase proteins.

MCT-supplemented diet was found to be effective in regressing behavioral symptoms of CCD after 30 days. It has been observed that modification techniques are effective as a multi-treatment option, especially at the level of stress and social relations, and regress the symptoms and prognosis of the disease.

## APPLICATION AREAS OF THE THESIS RESULTS

Veterinary Internal Medicine Neurology-Behaviour

## ACADEMIC ACTIVITIES

Seminar of behavioral disorders of cats and dogs- Bursa 2018- **Committee member of organizing**  
-KLIVET 6th International Spring Congress 'Geriatric Medicine in Cats and Dogs- Antalya 2018  
-ECVMAW-Berlin Germany 2018 (Obsessive-compulsive disorder in dogs and cats :A retrospective study of 60 cases (2010-2017)- **Poster Presentation**)  
-KLIVET 7th International Spring Congress' Pediatrics in Cats and Dogs- Antalya 2019 (Seroprevalence of Toxoplasmosis in Domestic Cats in Bursa- **Oral Presentation**)  
-2. Annual Meeting EVCBMAW- European Veterinary Congress of Behavioural Medicine and Animal Welfare 2019- Netherland, Eindhoven-**Long speak Presentation**-30 min.)- Effects of multimodal environmental modification in crystal-related feline lower urinary tract diseases \* **Fear Free Happy Homes Award**  
-14. KHVHD - Istanbul 2019 International Veterinary Practice Management and Business Administration Congress- Istanbul 2020 **Committee member of organizing**  
-ECVIM-CA Online Congress 2020  
-SEVC Online 2020- (A treatment way of dog with fly catching syndrome: A case report -**Poster Presentation**)  
3rd European Veterinary Congress of Behavioural Medicine and Animal Welfare  
-EVCBMAW) 2021- Effects of environmental enrichment on compulsive tail chasing treated with clomipramine- **Poster Presentation** )

## KEY WORDS

- ✓ Canine cognitive dysfunction
- ✓ MCT
- ✓ MEMO
- ✓ Alzheimer Disease
- ✓ Geriatric Dog Behaviour