Canine Seizure Data Collection Study

By Krystal Steiner

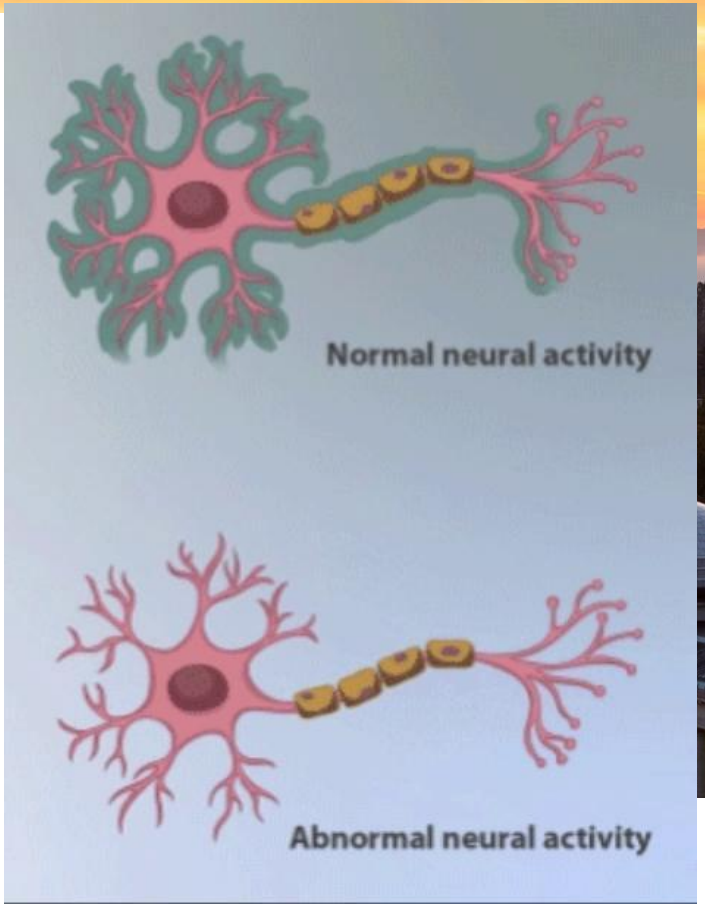
With Professor Patrick Donnelly



Oregon State University

Epilepsy in Canines

- Repeated episodes of seizures
- Most frequently reported neurological conditions in dogs
- Symptoms:
  - Collapsing,
  - Jerking
  - Stiffening,
  - Muscle twitching,
  - Loss of consciousness,
  - Drooling,
  - Foaming at the mouth.



Our Goal

- Create a device that automatically detects seizures
- Design a study to collect the Data
- Detect the difference between different types of movement including:
  - Walking
  - Running
  - Play (chasing a ball, wrestling)
  - Seizures

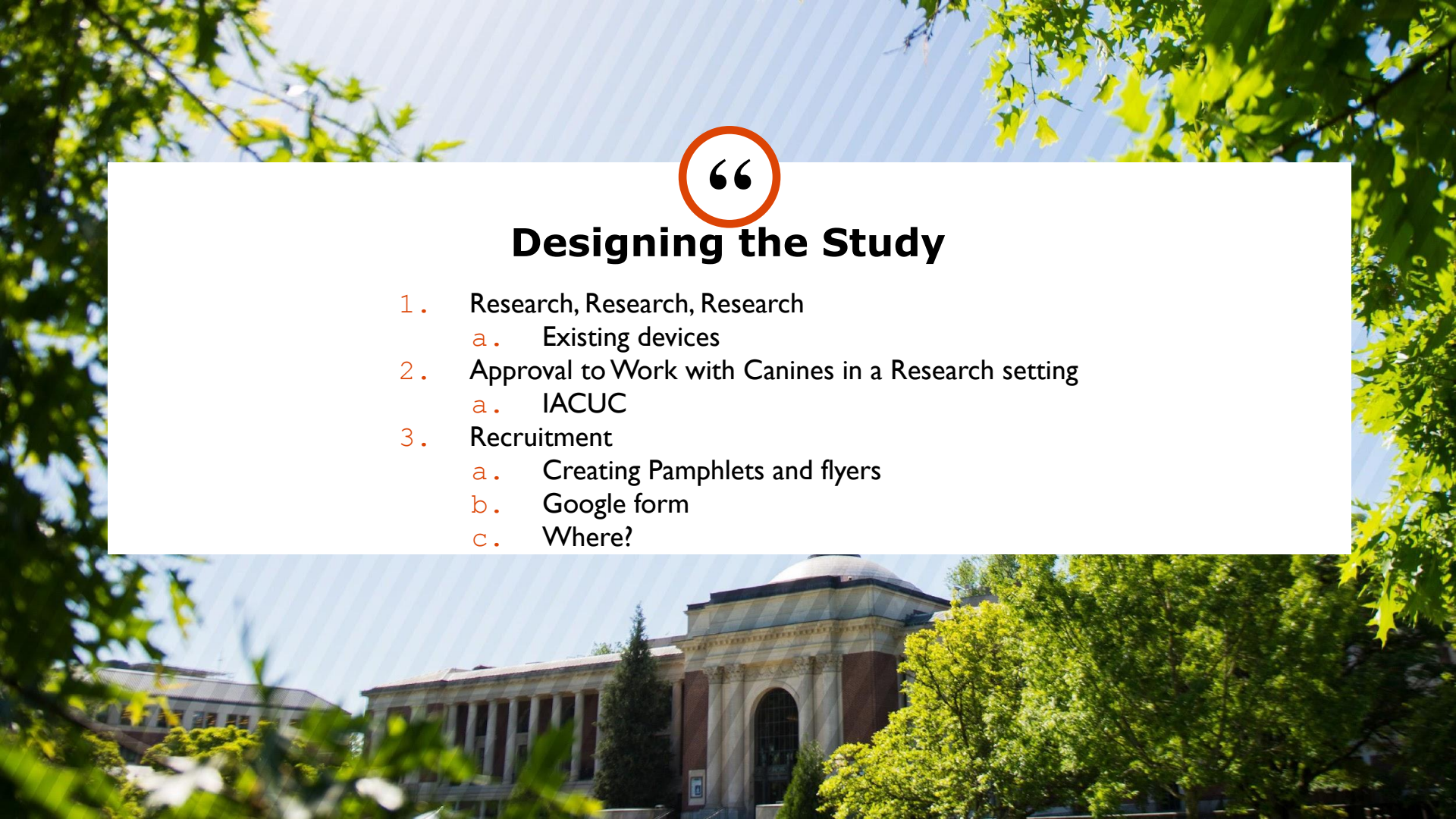


The Device

Team at OSU Cascades created a device that collects movement data





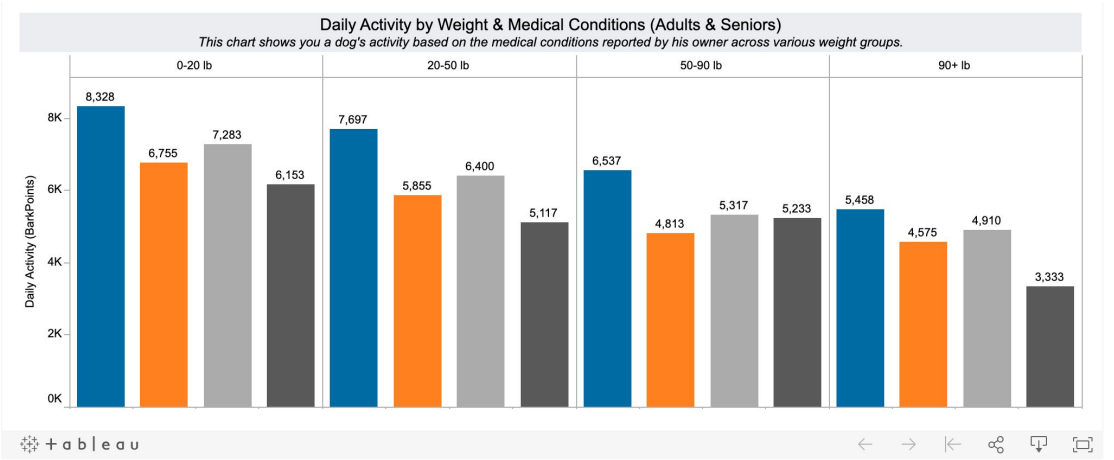


Designing the Study

1. Research, Research, Research
    a. Existing devices
2. Approval to Work with Canines in a Research setting
    a. IACUC
3. Recruitment
    a. Creating Pamphlets and flyers
    b. Google form
    c. Where?

Existing Devices and Movement Data



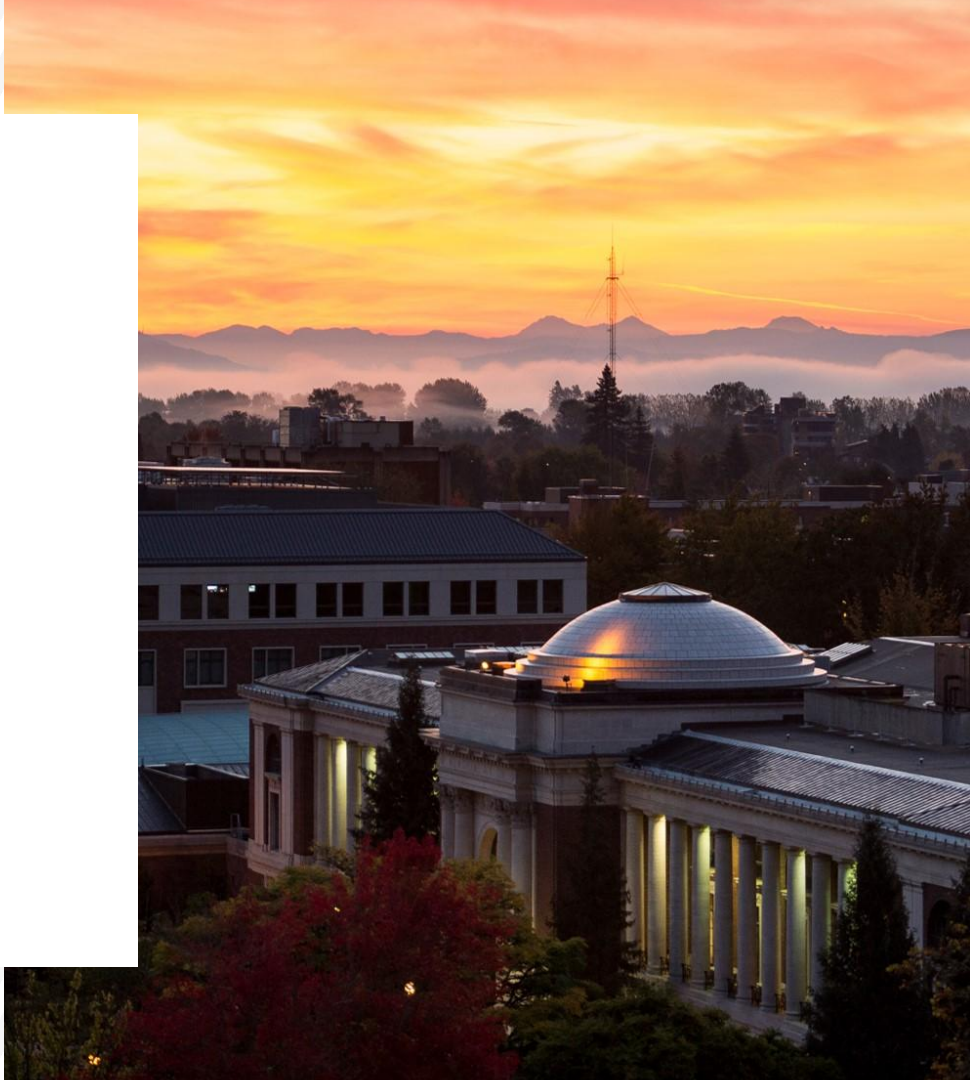


FITBARK

Osteoarthritis and dog's mobility

Approval for a Canine Study

- IACUC
- Fill out forms about the exact research we were doing
- Only involves working directly with people
- Exemption was approved



Recruitment

- Where?
  - Corvallis
  - Vet Hospitals
  - Neurology Animal Clinics
- How?
  - Pamphlet
  - Postcard
  - Google form









Pamphlet and Postcard



CANINE SEIZURE RESEARCH

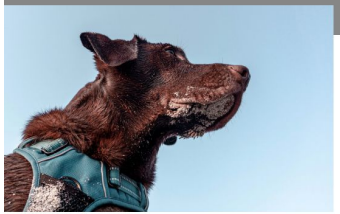
Oregon State University

CANINE SEIZURE RESEARCH

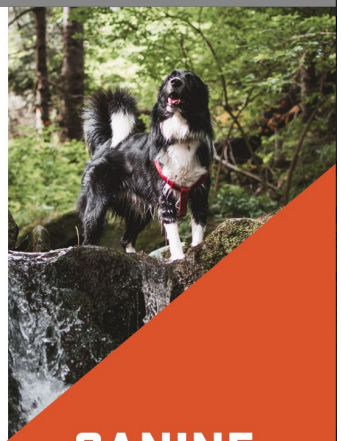
We are recruiting both epileptic and non-epileptic dogs to participate in a data collection study analyzing dog movement in play and at rest. This data will be used to develop a smart device trained to detect seizures in dogs. Just put a smart fanny pack on your dog to collect data about their movement.

Scan the QR Code to learn more

Oregon State University



Oregon State University



WHO WE ARE

This is a research project designed by students and faculty in the Computer Science Department at Oregon State University-Cascades. It is an interdisciplinary collaboration between students in Computer Science in Bend and students in Pre-Veterinary studies in Corvallis. Each member of our team has known and loved an epileptic dog and we are dedicated to finding technological solutions to improve the well-being of our epileptic canine friends.

CONTACT

Patrick Donnelly, Ph.D
donnellp@oregonstate.edu
541-706-2071
soundbendor.org

CANINE SEIZURE DETECTION

A research project at Oregon State University

Start Alpha Trials





	Sun 09-06-20	Activity	Mon 09-07-20	Activity	Tue 09-08-20	Activity
START	11:00:00 AM	leisure	12:30:00 PM	walk	3:02:00 PM	walk
END	11:30:00 AM		1:30:00 PM		3:32 PM	
START	11:31:00 AM	play	1:31:00 PM	car	3:32:00 PM	run
END	11:42:00 AM		2:05:00 PM		3:55:00 PM	
START	11:43:00 AM	run	2:06:00 PM	sleep	3:56:00 PM	leisure
END	12:30:00 PM		5:00:00 PM		7:00:00 PM	

Work Cited

BBB. (2109). Retrieved September 03, 2020, from https://www.bbb.org/ProfileImages/22244bfc-9b21-4b49-856d-bb89fab39cb1.png

Fitbark. (2016). Public Tableau. Retrieved September 03, 2020, from https://public.tableau.com/profile/fitbark

Flowers, A. (2019, July 21). Dog Seizure Disorders: Types, Causes, Symptoms, and Treatments. Retrieved September 03, 2020, from https://pets.webmd.com/dogs/dog-seizure-disorders

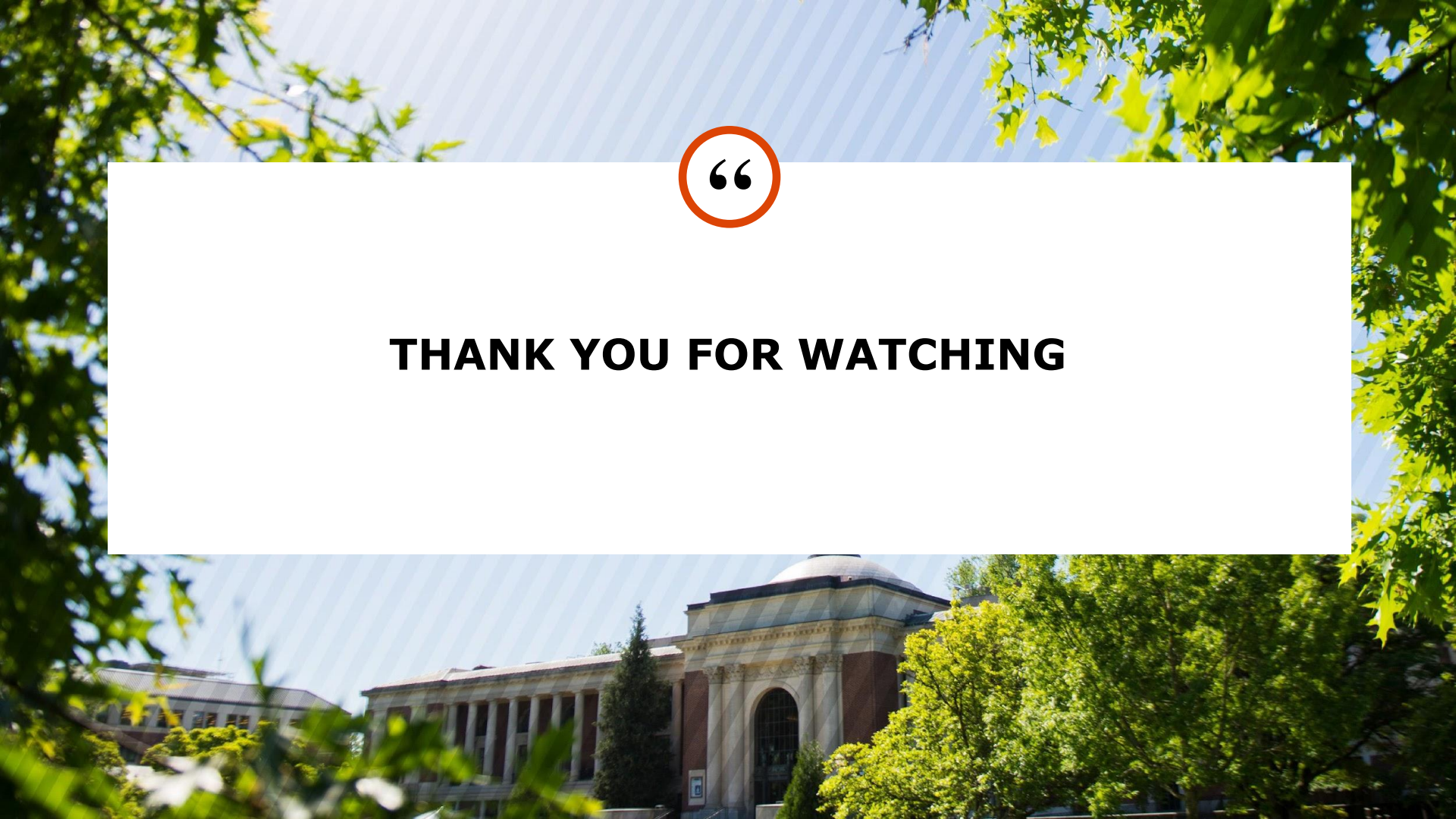
Hospital, O. (2020, August 28). Oregon Veterinary Specialty Hospital. Retrieved September 04, 2020, from https://ovshosp.com/

Mariani, C., & Muñana, K. (2017). Understanding Canine Epilepsy. Retrieved September 03, 2020, from https://www.akcchf.org/canine-health/top-health-concerns/epilepsy/understanding-canine-epilepsy.html

Osborn, D. (2020, July 14). Difference Between Seizure and Passing out. Retrieved September 03, 2020, from http://www.differencebetween.net/science/health/difference-between-seizure-and-passing-out/

VCA. (n.d.). Retrieved September 03, 2020, from https://mms.businesswire.com/media/20191011005511/en/319442/22/VCA_logo.jpg

Ward, E. (2017). Seizures in Dogs. Retrieved September 03, 2020, from https://vcahospitals.com/know-your-pet/seizures-general-for-dogs



THANK YOU FOR WATCHING