Dog Aging Project

Longer, healthier lives. Together.

DOG AGING PROJECT

THE POWER AND POTENTIAL OF COMMUNITY SCIENCE

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Graphics by: Jocelin B. Villarreal

TEXAS A&M UNIVERSITY

OUTLINE

WHAT IS COMMUNITY SCIENCE?

WHAT IS THE DOG AGING PROJECT?

HOW DOES THE DOG AGING PROJECT WORK?

WHY STUDY AGING IN DOGS?

IMPORTANT FINDINGS SO FAR...

TRIAD
THE TEST OF RAPAMYCIN IN AGING DOGS

HOW TO GET INVOLVED

WHAT IS COMMUNITY SCIENCE?

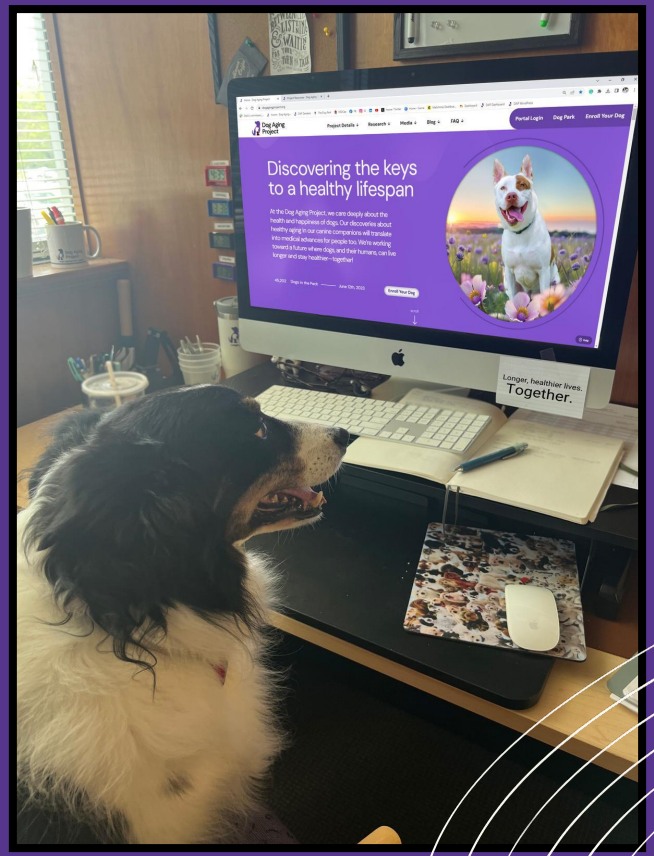
COMMUNITY SCIENCE

“A field that develops and researches community-centered models that enable communities to use evidence-based interventions more effectively and efficiently” (Tebes 2005)

“[...] an approach to academic–community partnerships that shares power with community partners in all aspects of the research process and benefits communities through interventions or policy” (Collins et al. 2022)

“community members collaborate, often with scientists and science engagement practitioners [...] to advance community priorities and benefit from science and engineering knowledge and advancements” (Community Science Initiative)

Tebes JK. Community Science, Philosophy of Science, and the Practice of Research. American Journal of Community Psychology. 2005;35(3-4):213-230. doi:10.1007/s10464-005-3399-x
Collins SA, Sullivan M, Bray HJ. Exploring scientists’ perceptions of citizen science for public engagement with science. JCOM. 2022;21(7):A01. doi:10.22323/2.21070201
https://communityscience.astc.org/



IN OTHER WORDS...

scientific research and monitoring driven and supported by and engaged with local communities

GULF OF MAINE RESEARCH INSTITUTE

Rising sea levels and coastal flooding are a serious issue

Coastline of GoM is >5000 miles long with only 3 tide gauges

How can one research team possibly survey the entire coastline timely and accurately?

- They don't have to: **Get the community involved!**
- https://investigate.gmri.org/project/coastal_flooding
  - Instructions for the local community to go to the coast and collect observational data

GULF OF MAINE: WHAT ARE THE BENEFITS?

RESEARCH BENEFITS

Ability to monitor a wider area and collect more data

Enhances data robustness by increasing participation rates

Grounds the research in real-life contexts

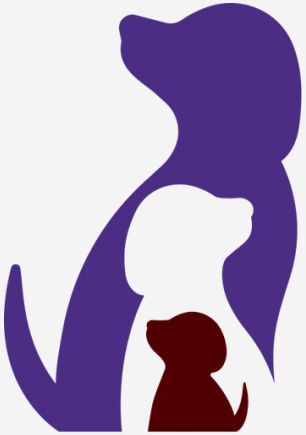
COMMUNITY BENEFITS

Community involvement in local issues

Ability for community members to learn about the project's topics, leading to more informed views and decisions

The joy of supporting research initiatives to better your community and more!

THERE ARE MANY EXAMPLES OF COMMUNITY SCIENCE PROJECTS, BUT OUR FOCUS TODAY WILL BE...



Dog Aging Project

Longer, healthier lives. Together.

WHAT IS THE DOG AGING PROJECT?

Dog Aging Project timeline

2007

DELP & KEC meet at UGA

2013

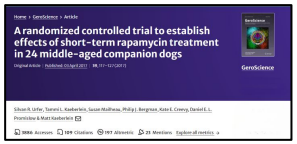
DELP moves to UW; formalizes collaboration with Matt Kaeberlein

+ LAUNCH OF FIRST DAP WEBSITE

2015

NIA R24 AG044284
The Canine Longevity Consortium

+ Rapa Phase 1 trial launched in Seattle



2017

NIA U19 AG057377:
The Dog Aging Project:
Genetic and Environmental Determinants of Healthy Aging in Companion Dogs

2018

NIA R24AG073137 - Developing the Privately Owned Companion Dog as a Model for Alzheimers Disease

2021

First Curated Data Release made publicly available on Terra

Creevy et al paper
An open science study of ageing in companion dogs.
Nature 602: 51–57.

2022

First DAP Consortium publication:
https://pubmed-ncbi-nlm-nih-gov.srv-proxy2.library.tamu.edu/collections/62720969/?sort=pubdate

2023

15 Consortium publications

>50,000 Pack members

36.5 Million Open Science data points

All related pubs here:

Dog Aging Project Google Scholar

TRIAD Clinical Trial

TRIAD RO1 AG090843

2024

2025

Coleman et al paper. **Test of Rapamycin in Aging Dogs (TRIAD): study design and rationale for a prospective, parallel-group, double-masked, randomized, placebo-controlled, multicenter trial of rapamycin in healthy middle-aged dogs from the Dog Aging Project**. Geroscience. 2025. doi: 10.1007/s11357-024-01484-7.

2011

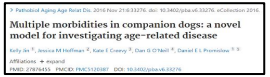
Fleming et al paper
Mortality in North American dogs from 1984-2004: an investigation into age-, size- and breed-related causes of death. J Vet Intern Med. 25(2): 187-198. DOI: 10.1111/j.1939-1676.2011.0695.x

2013

Hoffman et al paper
Reproductive capability is associated with lifespan and cause of death in companion dogs. PLoS ONE. 8(4): e61082. DOI:10.1371/journal.pone.0061082

2016

Donner Foundation Rapa 2 funded (but trial not complete until 2020 and not published until 2023



2019

Comprehensive update to website launched as part of opening of nominations; over 70,000 nominations in first 7 days

2022

Bray et al paper
Once-daily feeding is associated with better health in companion dogs: results from the Dog Aging Project. Geroscience 44(3):1779-1790. doi: 10.1007/s11357-022-00575-7.

&

Bray et al paper
Associations between physical activity and cognitive dysfunction in older companion dogs: results from the Dog Aging Project. Geroscience Sep 21;. doi: 10.1007/s11357-022-00655-8.

2023

McCoy et al paper
Social determinants of health and disease in companion dogs: a cohort study from the Dog Aging Project. . Evol Med Public Health. 2023;11(1):187-201 DOI: 10.1093/emph/eoad011

&

McNulty et al paper
Development and validation of a novel instrument to capture companion dog mortality data: the Dog Aging Project End of Life Survey. . J Am Vet Med Assoc 261(9): 1326-1336 DOI 10.2460/javma.23.02.0078

2024

Matheson et al paper
Silicone tags as an effective method of monitoring environmental contaminant exposures in a geographically diverse sample of dogs from the Dog Aging Project. Front. Vet. Sci. 2024;11. DOI: doi.org/10.3389/fvets.2024.1394061

&

Hargrave. *et al.* **Characterizing dog cognitive aging using spontaneous problem-solving measures: development of a battery of tests from the Dog Aging Project**. *GeroScience* 47, 23–43 (2024). https://doi.org/10.1007/s11357-024-01278-x

GOALS OF THE DAP

Define normal aging for dogs based on breed, size, sex

Identify genetic and environmental causes of diseases

Identify predictive factors for aging

Increase duration of healthy lifespan in dogs

Be an open-data resource for aging in dogs

Promote ethical research in companion animals

HOW DOES THE DOG AGING PROJECT WORK?

OUR MEMBERS

COHORTS

- **Main Pack:** 50,000 +
- **Foundation Cohort**: 6,054
- **Precision Cohort**: 1,000
- **TRIAD Cohort:** Goal 580 (still enrolling!)

TOTAL ENROLLMENT AS OF 1/1/2025:

50,188 DOGS

WHAT DOES BEING A DAP MEMBER ENTAIL?

Health and Life Experience Survey
(1st survey takes about 2 hours)

Surveys

- Health status, physical activity, environment, behavior, etc.
  - On enrollment, annual updates
- Cognitive status

*Optional: Uploading your veterinary electronic medical records
(We'll ask you if you want to upload your records on an annual basis.)

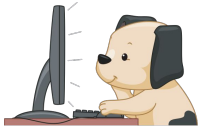
Digital Medical Record Sharing

- Optional - However, for cohort consideration, it is needed.

*Optional Activities
(Released throughout the year)

Annual At-Home Activities

- Cognitive activities
- Mobility activities



Pack Appreciation Events

- Are similar to science seminars and are hosted on the DAP YouTube channel

NO additional veterinary visits, no changes to lifestyle

- Our members in the general pack live their normal lives at home from start to finish!

Other cohorts have additional activities

- Precision: yearly blood sampling
- TRIAD: to discuss later

WHO CAN ENROLL?

ANYONE IN THE UNITED STATES!

- **No age limits, no breed requirements, no health requirements**
  - Only limit is 1 dog per household at a time!
- **Breed breakdown: 50/50 purebred/mixed**
  - Only 34 borzoi at this time
  - Lab, golden retriever, GSD top 3

WHO HANDLES THIS SURVEY DATA?

THE DAP TEAM

WE'RE AN *INTERDISCIPLINARY* RESEARCH TEAM!

We have a mix of experts from a wide range of fields. Our team includes veterinarians, aging researchers, ethicists, epidemiologists, and more.

Our Founders

Kate Creevy

Daniel Promislow

Matt Kaeberlein

Main Headquarters

+ **Researchers all across the country:** Virginia Tech, University of Georgia, Colorado State, and many more!

Members include: veterinarians, MDs, PhD candidates, students, laboratory staff, and more!

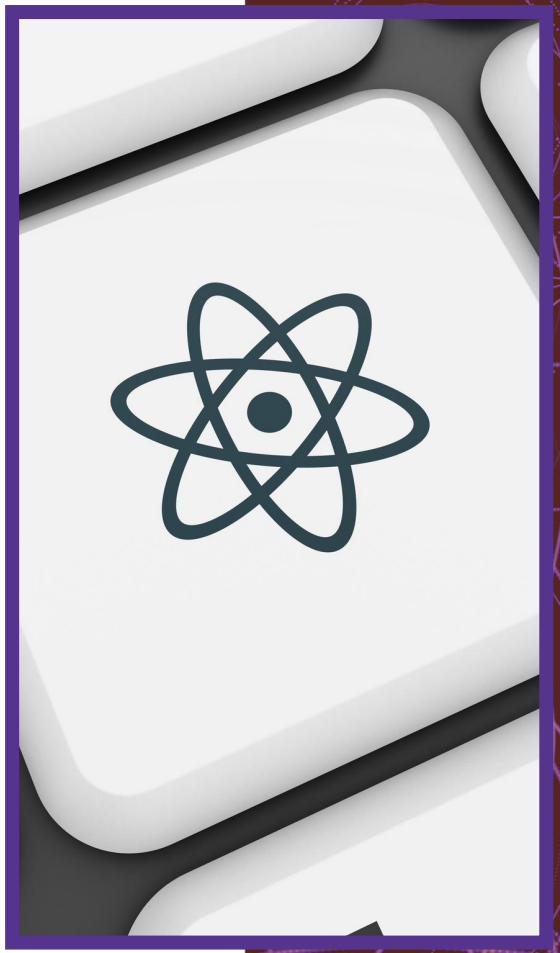
WHO ANALYZES THE DATA?

ANYONE!

Our data is open-source and released annually for use by anyone interested

As a community science project, our data is collected by the owners, and it is important to us for them to have access to it if they want

Other researchers/doctors can analyze our data and collaborate with us as well



WHAT HAPPENS ONCE THE DATA IS ANALYZED?

All publications using DAP data are open-access, available to anyone free of charge

73 total publications as of this presentation with many more currently in preparation

pubs.dogagingproject.org

WHY STUDY AGING IN DOGS?

THE INCITING QUESTION...

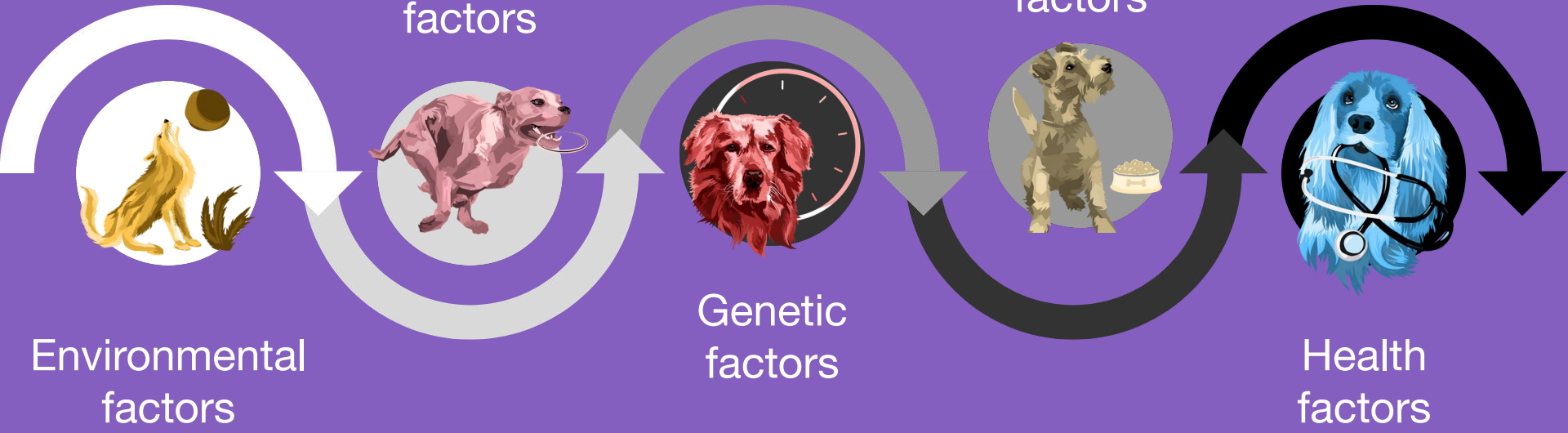
Daniel Promislow - aging biologist/geneticist

- Science magazine article regarding the genetics of size in dogs
  - *Sparked the question:* can we figure out why small dogs live longer than large dogs?

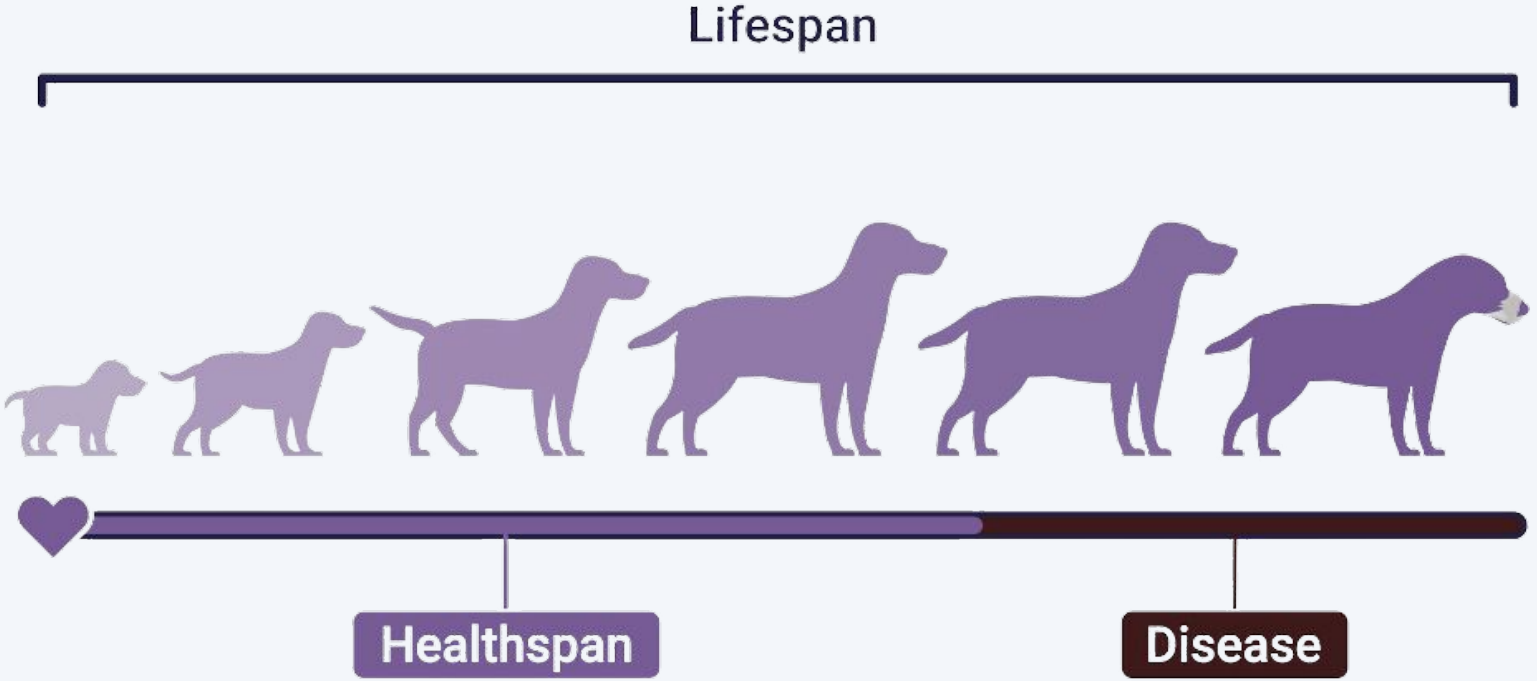
This prompted the connection with Kate Creevy (veterinarian), who came together to start studying aging in dogs

While we don't have a definitive answer to this question, it led to the framework of this project!

AGING IS MULTIFACTORIAL



HOW DO WE EVALUATE AGING?

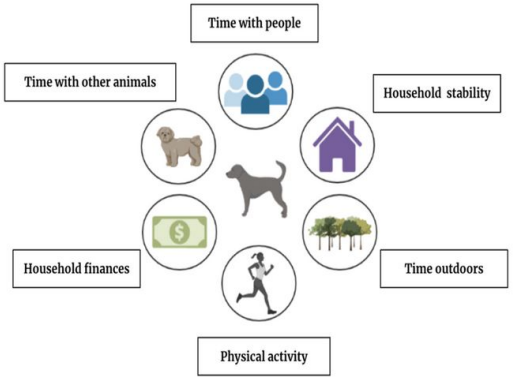


HOW DO WE EVALUATE HEALTHSPAN?
(healthy, active, and feeling good)

Survey Data

Survey data regarding:

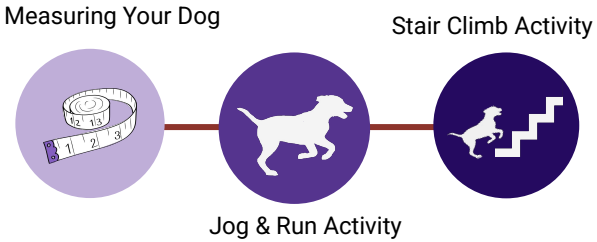
- Disease onset/severity
- Physical activity levels
- Cognitive function



Physical Activities

Mobility testing

- Measuring Your Dog
- Jog & Run Activity
- Stair Climb Activity



Cognitive Activities

Cognitive tests

- 1-2-3 Treat Activity
- Treat Hide and Seek Activity

THE COMPANION DOG AS AN AGING MODEL

Most of what we know about aging comes from laboratory species

- Yeast, worms, flies, mice

Companion dogs and humans age very similarly, albeit over different time spans

- Variable life expectancy
- Similar functional declines with age
- Similar diseases
- Many parallels in the treatment/healthcare system

<u>The major difference:</u> Dogs age 7-10 times faster than humans

THE *COMPANION* DOG AS AN AGING MODEL

Companion dogs share our environments

- The same air, the same allergens, the same pollutants, etc
  - This cannot be replicated in a laboratory

Our dogs are more than just pets - they're family

- This dedication to dogs and dedication to improving their health and life, allowing us to work with extremely committed and engaged community scientists

PUBLICATIONS / IMPORTANT FINDINGS

Cross-sectional survey of 43,517 dogs in the Dog Aging Project identifies owner-reported lifetime prevalence and characteristics of gastrointestinal disease

Evaluation of owner-reported surveys over a 3 year period - 43,000+ dogs!

30% of owners reported at least 1 GI disease

- Infectious GI disease [parasites, bacteria, viruses] (17%)
- Chronic diarrhea (3%)
- Foreign body ingestion, anal sac impaction, pancreatitis (2%)
- Inflammatory GI disease, chronic vomiting, acute hemorrhagic diarrhea syndrome (1%)
- All others <1%

The 30% were more likely to report probiotic use or nonprescription GI medications

- *Indicated that owners are willing to change lifestyle practices to accommodate GI disorders*

J Am Vet Med Assoc. 2024 Sep 18;262(12):1-9. doi: 10.2460/javma.24.05.0306. Print 2024 Dec 1.

Cross-sectional survey of 43,517 dogs in the Dog Aging Project identifies owner-reported lifetime prevalence and characteristics of gastrointestinal disease

Sarah M Schmid [1], Jessica M Hoffman [2], Emily N Gould [3], Alaina Moon [4], Kate E Creevy [5]

Affiliations + expand

PMID: 39293476 DOI: 10.2460/javma.24.05.0306

Free article

Abstract

Objective: To evaluate the prevalence of and characteristics associated with owner-reported gastrointestinal (GI) disease in companion dogs within the US.

Methods: Cross-sectional owner-reported survey study of 43,517 dogs enrolled in the DAP between December 26, 2019, and December 31, 2022. Dogs were grouped on the basis of having an owner-reported GI disorder (ORGID) versus not having that ORGID at any point in their history (control group). Multivariable logistic regression analysis was used to estimate the association between dog characteristics and ORGIDs with prevalence ORs (PORs).

Results: Of the 43,517 dogs in the DAP Pack, 30,677 (70%) had no history of ORGIDs and 12,840 (30%) had at least 1 ORGID. The most common ORGIDs included infectious diseases (7,580 of 43,517 [17%]), chronic diarrhea (1,316 [3%]), foreign bodies (1,086 [2%]), anal sac impactions (1,031 [2%]), pancreatitis (857 [2%]), inflammatory GI disease (615 [1%]), chronic vomiting (519 [1%]), and acute hemorrhagic diarrhea syndrome (388 [1%]). Compared to controls, dogs with noninfectious ORGIDs had greater odds of having a history of being castrated (POR, 2.55; 95% CI, 2.29 to 2.85), underweight (POR, 1.58; 95% CI, 1.47 to 1.70), or fed primarily canned food (POR, 2.51; 95% CI, 2.21 to 2.85) or receiving probiotics (POR, 1.69; 95% CI, 1.58 to 1.81) or nonprescription GI medications (POR, 4.06; 95% CI, 3.80 to 4.33).

Dog and owner demographics impact dietary choices in Dog Aging Project cohort

Owner-reported survey data: 40,000+ dogs over a 3 year period

82% feed commercial kibble
89% feed a consistent diet

Differences

- **Commercial kibble vs. home-cooked**
  - Younger owners tend to feed more kibble
  - Smaller, purebred dogs with reported diseases eat home-cooked diets more frequently
- **Raw diets**
  - Most commonly fed to purebred, intact, high activity dogs
    - Service dogs: 10% ate raw

These findings are purely descriptive - we cannot make claims about health, benefits, risks based on this study; simply it better helps us understand the dietary choices in our population and can pave the way for future studies looking at health outcomes based on diet types


AVMA Publications

Dog and owner demographics impact dietary choices in Dog Aging Project cohort

Abstract

OBJECTIVE

To describe the demographic factors of owners and their dogs associated with owner feeding choices and the regularity with which those diets were fed to a US-based population of dogs.

METHODS

This cross-sectional analysis examined 40,367 initial survey responses from US dog owners participating in the Dog Aging Project. The surveys were collected from January 2, 2020, to December 31, 2022, and included primary and secondary diet component types and dog and owner demographic variables. Each demographic variable was compared across diet type choices with a χ^2 test of independence.

RESULTS

Most owners (82%) fed a commercially prepared extruded dry diet (kibble) as the primary diet component. Most owners (89%) reported that they fed their dogs a consistent diet over time. Owner demographic factors (income, education level) were less correlated with difference in diet choices than dog demographic factors (size, neuter status, purebred status, activity level), but owner age did correlate with choice: younger owners tended to feed kibble more compared to older owners. Home-cooked diets were most often consumed by small (< 30-lb) dogs, purebred dogs in poorer health status, and dogs with owners aged 45 years or older. Raw diets were more commonly fed to purebred, intact, and highly active dogs. Ten percent of service dogs were reportedly fed a raw diet of some sort.

CONCLUSIONS

Demographic variables are associated with statistically significant differences in diet types selected. Nutrition studies examining health outcomes associated with the feeding of different diet types should account for these factors during design or analysis in order to avoid bias. An epidemiological tool, the directed acyclic graph, is presented.

CLINICAL RELEVANCE

This information will help clinicians in their discussions with clients about pet nutrition.

Clippers are superior to scissors in the collection of hair for chemical analysis in companion dogs

Goal: evaluate the safest and most efficient method for sampling hair/fur

Razors vs. clippers vs. scissors

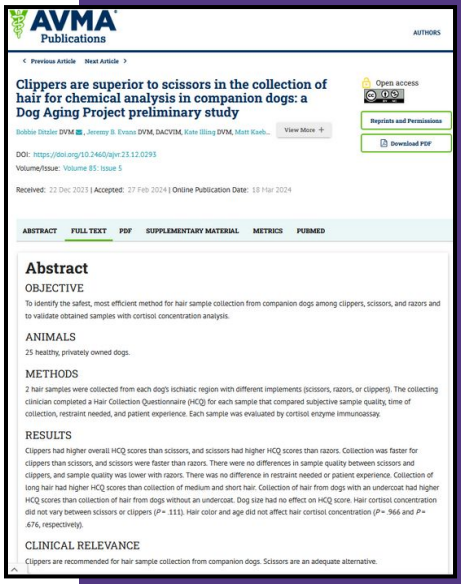
- Evaluated: collection time, restraint needed, long vs. short hair

Clippers faster than scissors, scissors faster than razors

- However, no differences in sample quality, restraint needed

Longer hair was found to be easier to sample than shorter hair

While these findings may not make a huge difference in how we take care of our pets, it can be helpful for other veterinarians to understand the most efficient ways of sample collection to minimize stress and maximize possible benefits



AVMA Publications

AUTHORS

Previous Article Next Article

Clippers are superior to scissors in the collection of hair for chemical analysis in companion dogs: a Dog Aging Project preliminary study

Bobbie Dinzler DVM, Jeremy B. Evans DVM, DACVIM, Kate Illing DVM, Matt Kaeb...

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DOI: https://doi.org/10.2460/ajvr.23.12.0293

Volume/Issue: Volume 85: Issue 5

Received: 22 Dec 2023 | Accepted: 27 Feb 2024 | Online Publication Date: 18 Mar 2024

ABSTRACT FULL TEXT PDF SUPPLEMENTARY MATERIAL METRICS PUBMED

Abstract

OBJECTIVE

To identify the safest, most efficient method for hair sample collection from companion dogs among clippers, scissors, and razors and to validate obtained samples with cortisol concentration analysis.

ANIMALS

25 healthy, privately owned dogs.

METHODS

2 hair samples were collected from each dog's ischiatic region with different implements (scissors, razors, or clippers). The collecting clinician completed a Hair Collection Questionnaire (HCQ) for each sample that compared subjective sample quality, time of collection, restraint needed, and patient experience. Each sample was evaluated by cortisol enzyme immunoassay.

RESULTS

Clippers had higher overall HCQ scores than scissors, and scissors had higher HCQ scores than razors. Collection was faster for clippers than scissors, and scissors were faster than razors. There were no differences in sample quality between scissors and clippers, and sample quality was lower with razors. There was no difference in restraint needed or patient experience. Collection of long hair had higher HCQ scores than collection of medium and short hair. Collection of hair from dogs with an undercoat had higher HCQ scores than collection of hair from dogs without an undercoat. Dog size had no effect on HCQ score. Hair cortisol concentration did not vary between scissors or clippers ($P = .111$). Hair color and age did not affect hair cortisol concentration ($P = .966$ and $P = .676$, respectively).

CLINICAL RELEVANCE

Clippers are recommended for hair sample collection from companion dogs. Scissors are an adequate alternative.

Lifetime prevalence of owner-reported medical conditions in the 25 most common dog breeds in the Dog Aging Project pack

Goal: estimate the lifetime prevalence of medical conditions in purebred dogs (25 most common) vs. mixed-breed dogs

Owner-reported survey data for 27,000+ dogs (~13,000 purebred, ~13,000 mixed-breed)

Purebred dogs overall more likely to have no reported medical conditions than mixed-breed dogs

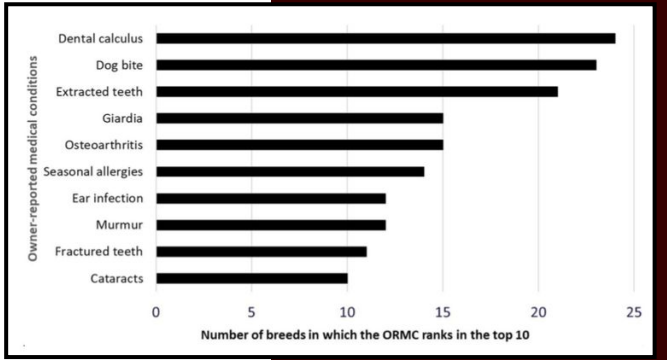
- Golden Retriever, Poodle, Australian Shepherd, Border Collie, Siberian Husky
- **The one exception:** Greyhounds - less likely to have no reported medical conditions

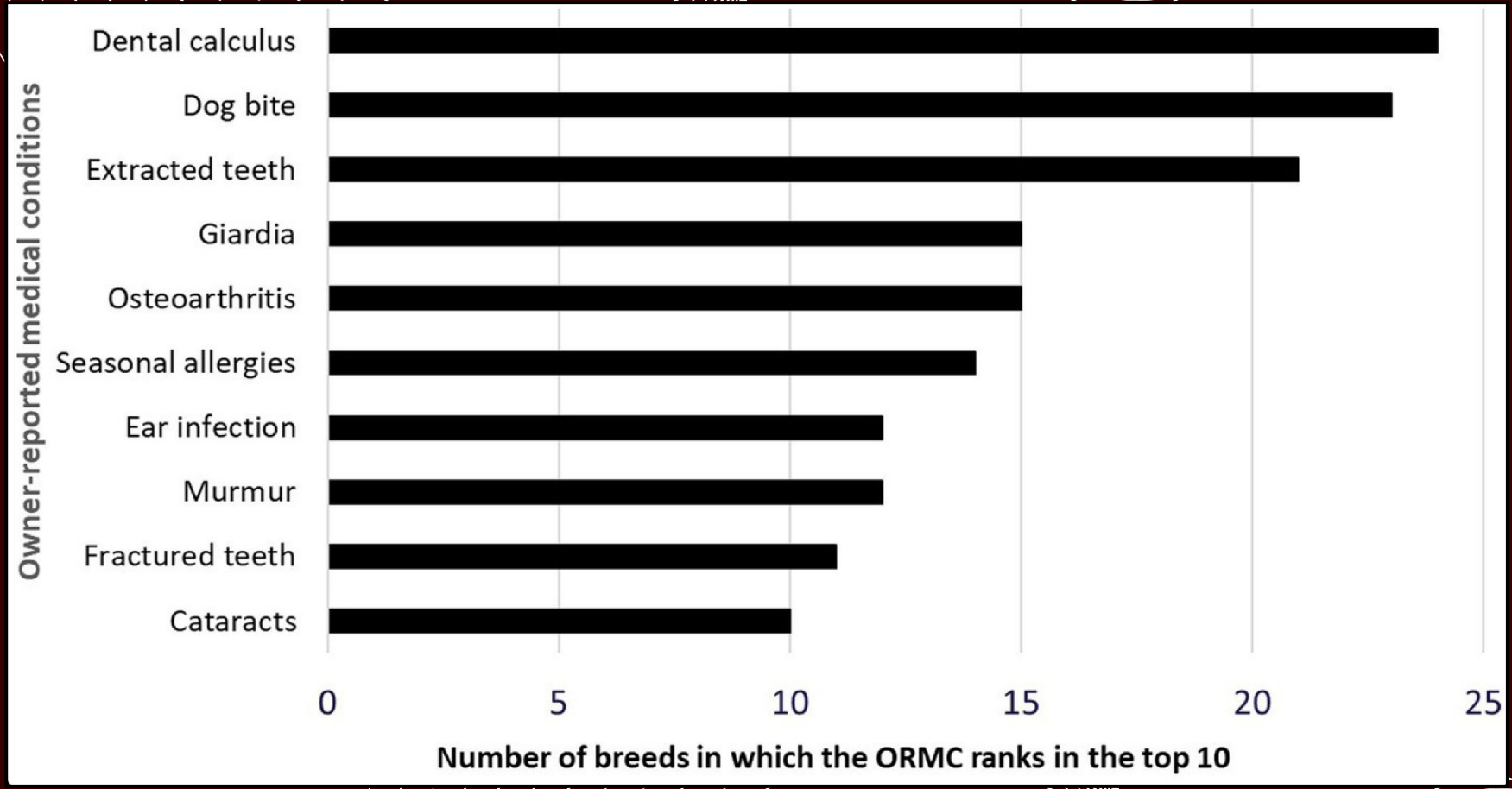
Outcome: allows us to better understand common diseases in specific breeds, which can allow for targeted prevention in the future

Front Vet Sci. 2023 Nov 3:10:1140417. doi: 10.3389/fvets.2023.1140417. eCollection 2023.

Lifetime prevalence of owner-reported medical conditions in the 25 most common dog breeds in the Dog Aging Project pack

Kiersten K Forsyth [1], Brianah M McCoy [2], Sarah M Schmid [3], Daniel E L Promislow [4 5], Noah Snyder-Mackler [2 6 7]; DAP Consortium; Kate E Creevy [8]




Owner-reported medical conditions
Dental calculus
Dog bite
Extracted teeth
Giardia
Osteoarthritis
Seasonal allergies
Ear infection
Murmur
Fractured teeth
Cataracts
0
5
10
15
20
25
Number of breeds in which the ORMC ranks in the top 10

Analysis of 2,570 responses to Dog Aging Project End of Life Survey demonstrates that euthanasia is associated with cause of death but not age

Goal: evaluate factors associated with passing (euthanasia vs. unassisted death)

2,570 End of Life Survey responses

85% of dogs were euthanized, 15% unassisted death

- *Most frequent cause of death was illness/disease (58%)*
- *Most frequent reason for euthansia: pain/suffering (49%)*

Euthanasia associated with lower quality of life scores but NOT age

- *This tells us that age in and of itself is not necessarily a disease, and that quality of life is a bigger factor in a decision to euthanize*

Outcome: better understand factors that are associated with manner of death as a way to provide better end-of-life care to pets and owners

J Am Vet Med Assoc. 2023 Sep 28;262(2):1-10. doi: 10.2460/javma.23.07.0366. Print 2024 Feb 1.

Analysis of 2,570 responses to Dog Aging Project End of Life Survey demonstrates that euthanasia is associated with cause of death but not age

Elizabeth B Pearson [1], Jessica M Hoffman [2], Rachel L Melvin [1], Kellyn E McNulty [1]; Dog Aging Project Consortium; Kate E Creevy [1], Audrey Ruple [3]

Affiliations + expand

PMID: 37770016 PMCID: PMC10996864 DOI: 10.2460/javma.23.07.0366

Abstract

Objective: The Dog Aging Project End of Life Survey was used to evaluate factors associated with manner of death (euthanasia vs unassisted death), including cause of death (CoD), reason for euthanasia (RFE) if performed, medical symptoms, old age characteristics, and perimortem quality of life (QoL).

Sample: Responses collected between the End of Life Survey launch (January 20, 2021) through December 31, 2021, from 2,570 participants whose dogs died.

Methods: Response frequencies were described. Associations between manner of death and medical symptoms or old age characteristics were evaluated using logistic regression. Factors associated with RFE were evaluated using multinomial regression. The effects of CoD, age at death, and QoL on the frequency of euthanasia as the manner of death were evaluated using multivariate logistic regression.

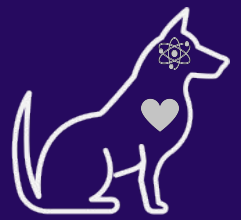
Results: 2,195 (85.4%) dogs were euthanized, and 375 (14.6%) experienced unassisted death. The most frequent owner-reported CoD was illness/disease (n = 1,495 [58.1%]). The most frequently reported RFE was pain/suffering (n = 1,080 [49.2% of those euthanized]). As age increased, RFE was more likely to be "poor QoL" than any other response. In a multivariate regression including CoD, chronologic age, and QoL, euthanasia as the manner of death was not significantly associated with age.

THE EVENTUAL GOAL

Better understanding of dog aging → Better chance to intervene and extend lifespan + healthspan in dogs

Better understanding of dog aging → Better understanding of human aging → Better chance to intervene and extend lifespan + healthspan in humans

TEST OF RAPAMYCIN IN AGING DOGS



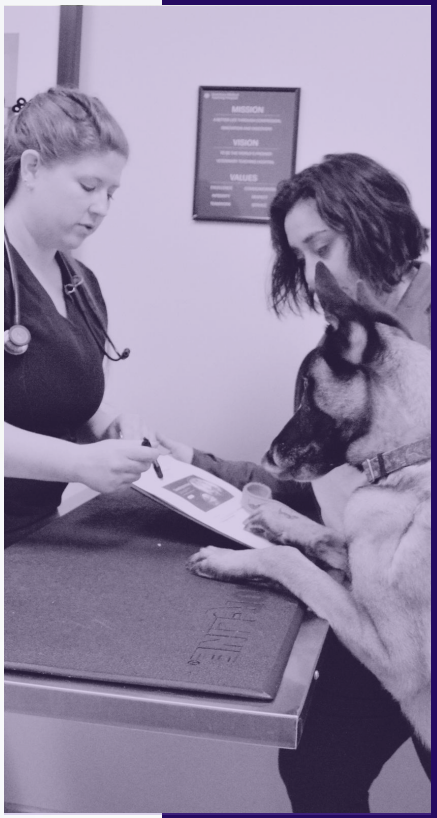
WHAT TYPES OF STUDIES EXIST?

OBSERVATIONAL TRIAL

- No interventions (medications, devices, treatments) performed on participants
- Monitor subjects in normal settings to answer questions
- Example: Lung cancer in smokers vs. non-smokers; DAP

CLINICAL TRIAL

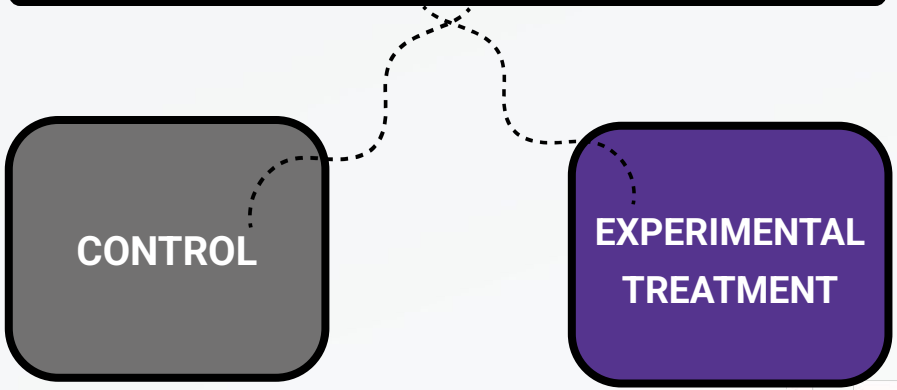
- Commonly called “Interventional Trial”
- Evaluate the effect of a medication, device, treatment, etc. on participants
- If we “intervene,” what changes occur?
- Example: TRIAD!



HOW DO MOST CLINICAL TRIALS WORK?

2 groups: control (no treatment or known treatment) and experimental treatment

Randomly selected to be in one of the two



Everything else is the same between the two groups - the only difference is the treatment - that way the effect of the treatment alone can be evaluated

WHAT IS TRIAD?

Double-blind, placebo-controlled clinical trial of the medicine rapamycin

WHAT DOES RAPAMYCIN DO?

High dose (humans)

- Cancer treatment
- Preventing organ transplant rejection

Low Dose

- Increased lifespan (yeast, nematodes, fruit flies, mice)
- Increased healthspan (mice)
  - Reduced incidence of cancer
  - Improved cognitive function
  - Reduced eye disease
  - Improved muscle function
  - Improved immune system function
  - Improved heart function

IS RAPAMYCIN SAFE?

Most adverse effects in humans are temporary and seen at high doses

- Elevated triglyceride levels
- Elevated blood sugar
- Mouth ulcers
- Skin issues

Low dose in dogs - only mild, temporary side effects seen

- Decreased appetite
- Vomiting/diarrhea
- Decreased platelet numbers
- Elevated triglycerides

Our study's dosing is less frequent and lower dose than the doses at which severe adverse effects were seen

WHAT ARE THE GOALS OF TRIAD?

AIMS OF TRIAD:

- The **primary objective** of the study is to determine whether rapamycin increases lifespan in companion dogs.
- The **secondary endpoints** are designed to assess the ability of rapamycin to improve healthspan by enhancing functional measures of aging and reducing age-related disease burden.

ENROLLMENT TARGET:

580 DOGS

WHO MAY QUALIFY FOR TRIAD?

- At least 7 years of age
- 44 -121 pounds (20-55kg)
- Spayed/neutered
- Good temperament
  (can tolerate diagnostic testing without sedation/aggression)
- In good health

BLOG POST: Inside TRIAD: A Deeper Dive into the Test of Rapamycin In Aging Dogs

WHAT DOES PARTICIPATING IN TRIAD ENTAIL?

1. Visit a clinical site every 6 months
2. Participate for a total of 3 years
3. Give your dog a heartworm preventive
4. Keep your dog up-to-date on vaccines
5. Administer the study medication weekly
6. Complete all surveys and activities

WHAT ARE THE BENEFITS OF JOINING TRIAD?

Contributing to cutting-edge scientific research

Continued monitoring of blood testing, neurologic/cardiologic testing, regular examinations by veterinarians

Potentially receiving a benefit to healthspan and lifespan

Including lots of attention, treats, and belly rubs when the testing is completed!

HOW TO GET INVOLVED?

BECOME A MEMBER OF THE DAP PACK!

- All dogs are welcome, regardless of age, breed, health status, etc.
- Completely free, all from the comfort of your own home
- To join, visit **dogagingproject.org**

GET SCREENED FOR TRIAD!

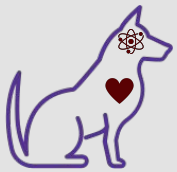
This will happen automatically on enrollment to the DAP Pack

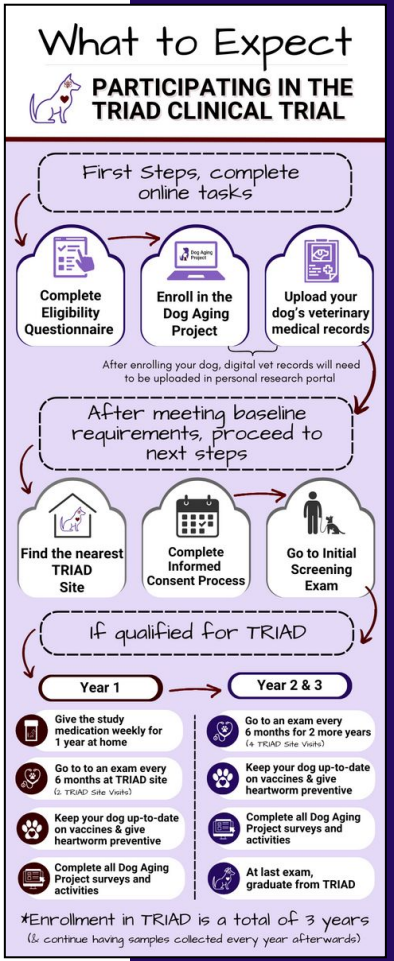
Prior to enrollment, you can do the "TRIAD Fast Track" survey to check initial eligibility

- dogagingproject.org/TRIAD

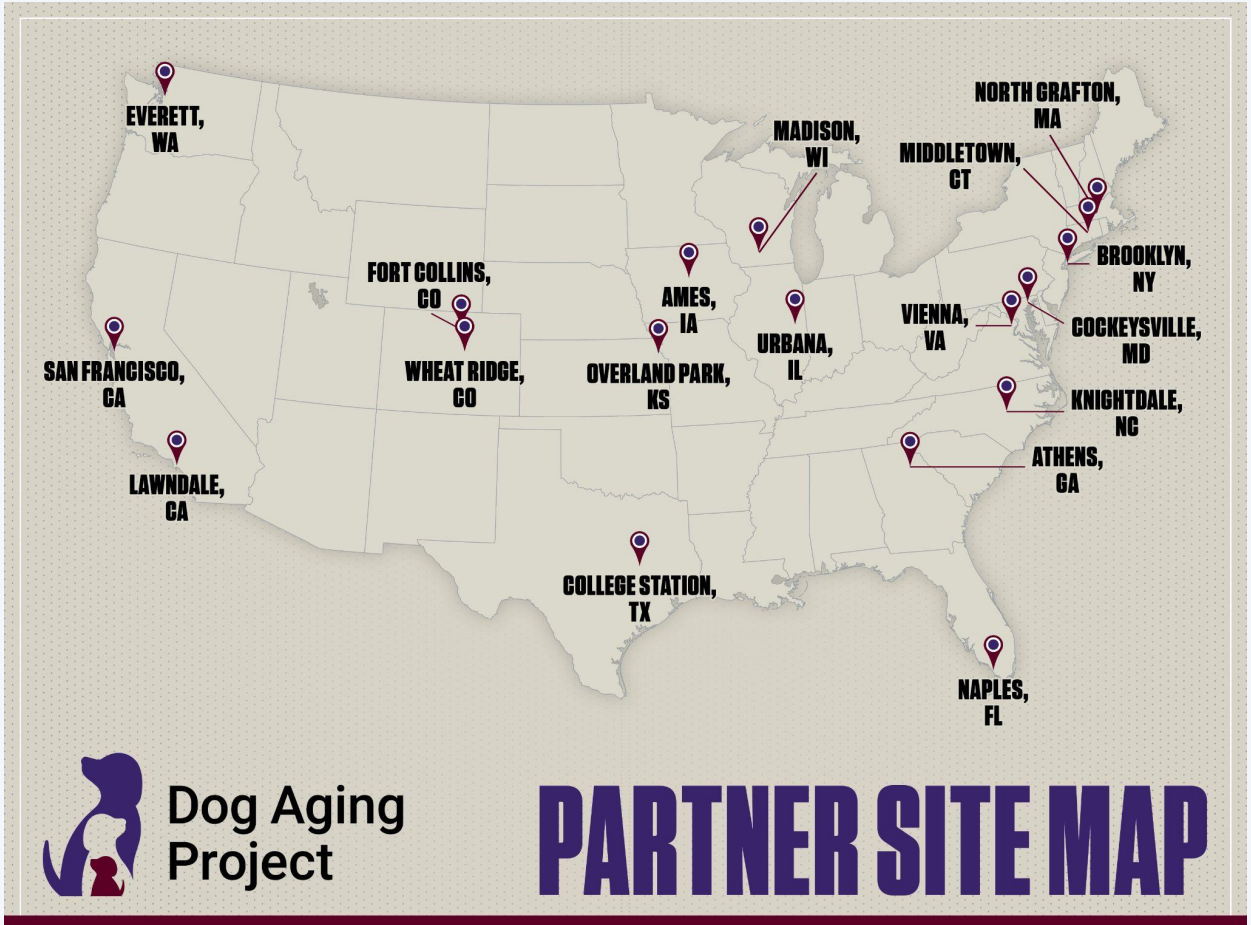
As a reminder:

- 7 years
- 20-55 kg (44-121 lbs)
- Good temperament
- In general good health
- Spayed/neutered





CURRENT TRIAD SITES



SPREAD THE WORD!

The more dogs we enroll, the more we can learn and the more we can help!

Word of mouth is huge - let your friends, neighbors, local communities know!

SPREAD THE WORD!

At: **dogagingproject.org/project-resources**


Questions?
Email our team at
team@dogagingproject.org