

# Dog Aging Project 2023 Curated Data Open Access Release

---

The DAP 2023 Curated Data Open Access Release version 1.0 was released on 3/18/2025.

This workspace is used to download the 2023 Curated Open Access Release of the Dog Aging Project's:

- Survey Data: HLES, CSLB, EOLS, and AFUS
- Environment Data
- Additional Studies Data
- Samples Metadata and Results
- Genetic data

This 2023 Open Access release includes all data collected on or before 12/31/2023, excluding dogs belonging to staff or those randomized into TRIAD on or before 12/31/2023.

**Citation:** Dog Aging Project. (2024). Dog Aging Project - 2023 Curated Data Open Access Release, version 1.0 [Data files and codebook]. <https://app.terra.bio/> : Terra at the Broad Institute of MIT and Harvard.

**Acknowledgement:** This research is based on publicly available data collected by the Dog Aging Project, under U19 grant AG057377 (PI: Daniel Promislow) from the National Institute on Aging, a part of the National Institutes of Health, and by additional grants and private donations, including generous support from the Glenn Foundation for Medical Research, the Tiny Foundation Fund at Myriad Canada, and the WoodNext Foundation. These data are housed on the Terra platform at the Broad Institute of MIT and Harvard.

---

# Data Description

---

## Dog Overview

The Dog Overview provides basic information about DAP status, demographic characteristics, and availability of various survey, environment, and biological sample results for each dog. This dataset is intended to provide a starting point for summarizing and understanding the linkages between available data types and identifying relevant subsets of dogs for analyses.

**47,444** dogs are included in the 2023 Curated Data Open Access Release. This includes all study participants who completed the 10 sections of HLES (and became members of the DAP Pack) on or before 12/31/2023.

For a detailed explanation of the information contained in the Dog Overview, please see the [Dog Overview User Guide](#).

## Survey Data

[PDFs of all survey instruments with annotations indicating variable names](#)

### Health and Life Experience Survey (HLES) Baseline

The Baseline HLES is the foundation for all research conducted by the Dog Aging Project. Anyone who nominates a dog at <https://dogagingproject.org/> is invited to complete the HLES. The HLES consists of ten sections\* and contains hundreds of questions about lifestyle, environment, behavior and health. Upon completion of the Baseline HLES, enrolled dogs become members of the research cohort called the Dog Aging Project Pack (DAP Pack). \*Note that the Diet instrument was replaced with the Comprehensive Diet instrument in July 2022

Summary statistics for HLES are available at <https://data.dogagingproject.org>. Please refer to this site for an overview of HLES survey questions and responses.

**47,444** HLES records are included in the 2023 Curated Data Open Access Release. This includes all study participants who completed the 10 sections of HLES (and became members of the DAP Pack) on or before 12/31/2023.

### **Annual Follow-Up Survey (AFUS)**

The HLES Annual Follow-Up Survey (AFUS) is administered to all members of the DAP Pack on the yearly anniversary of their completion of the Baseline HLES.

**49,164** AFUS records associated with 26,847 dogs are included in the 2023 Curated Data Open Access Release. This includes complete data from all participants who completed all 11 sections\* of the AFUS on or before 12/31/2023, as well as partial data from participants who completed some portion of the 11 sections of the AFUS on or before 12/31/2023. \*Note that the Diet instrument was replaced with the Comprehensive Diet instrument in July 2022

### **Canine Social and Learned Behavior Survey (CSLB)**

The CSLB Survey is used to assess age-related cognitive and behavioral changes in dogs. This survey instrument is a minimally modified version of the Salvin Canine Cognitive Dysfunction Rating Scale (Salvin HE et al., 2011). In the first year (2020) of the DAP study, the CSLB survey was administered to all DAP Pack members beginning in October. Any additional participants who became DAP Pack members in November and December 2020 were also administered the CSLB survey. Beginning in 2021, CSLB was administered to all DAP Pack members annually every September.

**73,898** CSLB records are included in the 2023 Curated Data Open Access Release. This includes all DAP Pack members who completed CSLB in 2020, 2021, 2022, and/or 2023.

### **End of Life Survey (EOLS)**

The EOLS survey is used to collect information surrounding the circumstances of a dog's death.

**7,786** EOLS records are included in the 2023 Curated Data Open Access Release. This includes EOLS responses from all DAP Pack members who reported that their dog was deceased on or before 12/31/2023.

## Environment Data

The DAP Environment Data contains geographically-defined data from secondary sources pertaining to the dog's external environment. Environmental data are based on respondents' primary and (where applicable) secondary address information, provided in the HLES owner contact form or via AFUS updates. Respondent addresses are geocoded and linked to existing data that characterize various aspects of the dog's external environment. The 2023 Curated Data Open Access Release contains environmental data associated with all study participants who became DAP pack members on or before 12/31/2023.

For more details about the environmental data, please see the [Environment Data User Guide](#).

## Additional Studies

### Cognitive Games: 1-2-3 Treat

The 1-2-3 Treat Activity is a spatial memory task that assesses a dog's recall of the location of a food reward across a series of trials. This activity was initially administered in March 2022 and then annually in February. For more details about the 1-2-3 Treat data, please see the [1-2-3 Treat User Guide](#).

**5,235** responses from 1-2-3 Treat are included in the 2023 Curated Data Open Access Release. This includes all study participants who completed the introduction, warm-up, and activity sections of 1-2-3 Treat in 2022 and/or 2023.

## **Morphometrics and Mobility**

These Morphometrics and Mobility data are collected through a series of at-home activities that can be used as standalone datasets. These activities were initially administered in June 2022 and then annually in April. For more information about the Morphometrics and Mobility data, please see the [Morphometrics and Mobility User Guide](#)

**4,213** responses from the Measure-Your-Dog activity, **3,726** responses from the Jog-Run activity, and **3,419** responses from the Stair-Climb activity are included in the 2023 Curated Data Open Access Release. This includes all study participants who completed a given activity component in 2022 and/or or 2023.

## **Samples Results**

### **Samples Results Metadata**

The Samples Results Metadata contains information about the conditions associated with collection and processing of a given sample. This dataset contains information about CBC, Chemistry Panel, Flow Cytometry, Metabolome, Microbiome, and Urinalysis results processed on or before 12/31/2023. For more information about the samples results data, please see the [Samples Results Metadata User Guide](#).

For detailed sample collection methodology refer to: Prescott, J., Keyser, A.J., Litwin, P. et al. Rationale and design of the Dog Aging Project precision cohort: a multi-omic resource for longitudinal research in geroscience. GeroScience (2025).

<https://doi.org/10.1007/s11357-025-01571-3>

**1,079** dogs have metadata associated with sample collection available in the 2023 Curated Data Open Access Release.

## Samples Results

### CBC

This dataset contains results for CBC samples processed on or before 12/31/2023.

**1,044** dogs have CBC results in the 2023 Curated Data Open Access Release.

### Chemistry Panel

This dataset contains results for Chemistry Panel samples processed on or before 12/31/2023.

**1,072** dogs have chemistry panel results in the 2023 Curated Data Open Access Release.

### Urinalysis

This dataset contains results for urine samples processed on or before 12/31/2023.

**1,034** dogs have urinalysis results in the 2023 Curated Data Open Access Release.

## Genetic Data

The DAP genetic data package contains genetic data derived from whole genome, low-coverage DNA sequencing and genotype imputation delivered on or before December 31st, 2023. In total, 8,202 sequencing runs were performed for **8,093** samples from **7,814** dogs. Genotype data and derived data, including ancestry and inbreeding, were also generated for each dog. More information about the samples and methods used can be found in the [Genetic Data User Guide](#).

---

# Accessing Data

[DAP\\_2023\\_CODEBOOK\\_v1.1](#) includes variable names, question text, and value labels for all fields in Dog Overview, HLES, AFUS, CSLB, EOLS, Additional Studies, Environment, and Samples files.

## Dog Overview Data Files

FileName	Description
DAP_2023_Dog_Overview_v1.1.* **	Basic DAP status and demographic variables for all dogs

## Survey Data Files

FileName	Description
DAP_2023_HLES_dog_owner_v1.0.* **	All variables from Baseline HLES, EXCEPT specific health and cancer condition variables
DAP_2023_HLES_health_conditions_v1.0.***	All specific health condition variables from Baseline HLES
DAP_2023_HLES_cancer_conditions_v1.0.***	All specific cancer condition variables from Baseline HLES
DAP_2023_AFUS_dog_owner_v1.1.***	All variables from AFUS, EXCEPT specific health and cancer condition variables

DAP_2023_AFUS_health_conditions_v1.0.***	All specific health condition variables from AFUS
DAP_2023_AFUS_cancer_conditions_v1.0.***	All specific cancer condition variables from AFUS
DAP_2023_CSLB_v1.0.***	All variables from CSLB
DAP_2023_EOLS_v1.0.***	All variables from EOLS

## Environment Data Files

FileName	Description
DAP_2023_ENVIRONMENT_v1.0.***	All secondary source data describing the dog's external environment

\*\*\* All dog overview, survey, and environment data are provided in Comma-separated values (.CSV), R (.RData), STATA (.dta), and SPSS( .sav) formats. For details on how the data within these files have been structured, please see [tips for working with survey data files](#). If you are an R user, we strongly suggest reviewing the [DAP .RData USER GUIDE](#).

## Additional Studies Data Files

FileName	Description
DAP_2023_CognitiveGames_123Treat_v1.0.csv	Variables associated with 1-2-3 Treat activities
DAP_2023_MorphometricsAndMobility_MeasureYourDog_v1.0.csv	Variables associated with Measure Your Dog activity



DAP_2023_MorphometricsAndMobility_JogRunActivity_v1.0.csv	Variables associated with Jog/Run activity
DAP_2023_MorphometricsAndMobility_StairClimbActivity_v1.0.csv	Variables associated with Stair Climb activity

## Samples Results Files

FileName	Description
DAP_2023_Samples_Results_Metadata_1.0.csv	Variables associated with sample collection and processing
DAP_2023_Samples_Results_CBC_v1.0.csv	CBC results
DAP_2023_Samples_Results_Chemistry_Panel_v1.0.csv	Chemistry Panel results
DAP_2023_Samples_Results_Urine_v1.0.csv	Urinalysis results

## Genetic Data Files

FileName	Description
DogAgingProject_GeneticData_CuratedRelease_2023.bed DogAgingProject_GeneticData_CuratedRelease_2023.bim	PLINK1* bfile data set

DogAgingProject_GeneticData_CuratedRelease_2023.fam	
DogAgingProject_GeneticData_CuratedRelease_2023.tsv	Sample information, sex confirmation, coefficients of inbreeding, and genomic size prediction scores
DogAgingProject_GeneticData_CuratedRelease_2023.kinship.tsv	Pairwise kinship (dog x dog)
DogAgingProject_GeneticData_CuratedRelease_2023.rel.tsv	Genetic relationship matrix
DogAgingProject_GeneticData_CuratedRelease_2023.ancestry.tsv	Global ancestry (dog x population)

## Download Data

1. From any tab in the workspace, click the file folder icon on the right-hand side of the screen.
2. For survey data, choose the SurveyData folder, and then the folder corresponding to the file format you prefer (CSV, R, SPSS, or STATA). For genetic data, choose the GeneticData folder.
3. Click the file you would like to download.
4. Press the DOWNLOAD button (NOTE: There is no cost to you to download these data files).

# Known Issues

Known issues are briefly described in the table below.

Affected Dataset(s)	Affected Variable(s)	Description
HLES_health_conditions	hs_diagnosis_year, hs_initial_diagnosis_year	Participants may have entered values outside of the valid range of 1980-2025 allowed by REDCap (e.g., "07") and/or before the birth year of the dog.
HLES_health_conditions	hs_condition, hs_condition_type	Participants may have indicated a diagnosis within a broad category (e.g. eyes, cardiac) without specifying further details about the condition.
HLES_health_conditions	hs_condition, hs_condition_type	hs_condition 716 and 1702 were erroneously omitted from previous datasets.
AFUS_health_conditions	afus_hs_new_condition, afus_hs_new_condition_type	Participants may have indicated a diagnosis within a broad category (e.g. eyes, cardiac) without specifying

		further details about the condition.
AFUS_health_conditions	afus_hs_new_condition, afus_hs_new_condition_type	afus_hs_new_condition 716 and 1702 were erroneously omitted from previous datasets.
CSLB	All	Some respondents indicated that their dog never exhibits a given cognitively dysfunctional behavior, yet also indicated an improvement in that behavior over the last 6 months
Environment	All	Ad hoc address updates provided by participants using the "My Profile" interface in REDCap are not included in this dataset.
Dog_Overview	Demographic classifications	Updates and corrections were made to these fields based on user feedback from the last release; please use most up to date versions of these metrics for any given dog.

AFUS_dog_owner	afus_pa_swim_XX_weather_frequency, afus_de_property_containment_type_other_description, afus_df_XX, afus_dt_XX	In some cases, these fields may have been populated with NA or FALSE in previous releases.
----------------	--	--

If you believe a given issue could affect your analysis, it is recommended that you review the [detailed known issues documentation](#) to determine appropriate action on your part.

---

## Contact

To report technical issues with this Terra workspace or potential problems with the data in this workspace, please contact the Dog Aging Project Data Manager, Mandy Kauffman ([mekauffm@uw.edu](mailto:mekauffm@uw.edu)).