April 20, 2026

Request for Information: Standards for the Care of Breeding Female Dogs and Exercise Socialization of Dogs (APHIS-2025-1000-0001)

The Pet Food Institute (PFI) appreciates the opportunity to provide comments on the nutritional needs of breeding females and the importance of socialization and exercise for canine welfare. Proper nutrition tailored to the breeding life stage is critical for female dogs. Extensive research supports the benefits of socialization and exercise for dogs. Age-appropriate socialization should begin within the first few days of a puppy's life by introducing them to people, objects, and experiences in a controlled, positive environment they will encounter later in life. PFI appreciates USDA's work in this area and supports addressing pets' unique nutritional needs at different life stages, as well as science-based approaches to socialization and exercise.

Established in 1958, PFI is the trade association representing U.S. cat and dog food manufacturers providing complete and balanced nutrition for the dogs and cats in 94 million U.S. households. Our members account for most of the dog and cat food made in the United States, with more than $65 billion in domestic annual dog and cat food and treats sales and annual exports of more than $2.4 billion. PFI's members collectively contribute to rural communities' vibrancy by employing over 35,000 people in 34 states, purchasing over $13.2 billion in agricultural inputs from U.S. farmers and ranchers.

PFI has addressed each of the questions posed by APHIS below.

Care Considerations for Breeding Females

Do breeding female dogs require additional veterinary or other care considerations over those for non-breeding dogs? What are the most common health issues documented in female breeding dogs?

Nutrient-related disorders in breeding female dogs include eclampsia (puerperal hypocalcemia), hypomagnesemia, and other forms of hypocalcemia associated with late gestation and early lactation. Maintaining an optimal body condition score (BCS) before breeding, throughout gestation, and during lactation is critical to support maternal health and reproductive performance. Adequate body condition enables the dam to meet the metabolic demands of fetal growth and milk production. Particular attention should be given after the fifth week of gestation, when the majority of fetal growth occurs and nutritional requirements increase substantially. Appropriate body condition is associated with improved conception rates and favorable whelping outcomes, whereas obesity has been linked to reduced fertility, smaller litter sizes, and increased risk of periparturient complications.

Breeding females should be maintained on a complete and balanced diet formulated for reproduction and lactation. Preventive health care is also essential. Vaccinations should be administered prior to breeding or between pregnancies to optimize maternal immunity and passive transfer of antibodies to neonates. Year-round heartworm prevention is recommended. Strategic anthelmintic therapy during late gestation and early lactation is indicated to reduce transplacental and transmammary transmission of parasites. Once pregnancy is confirmed, the dam should undergo regular veterinary evaluation at established intervals to monitor maternal condition, fetal development, and early detection of potential complications.

Suggested documentation:

- **Davidson, A.P., Reproductive Causes of Hypocalcemia. 2012 Nov 27:4:165. doi.org/10.1053/j.tcam.2012.09.002. PMID: 23415384 Reproductive Causes of Hypocalcemia -PMC**
- **Khanna, C., Lund, E., Raffe, M., Armstrong, P.J., Hypomagnesemia in 188 Dogs:A Hospital Population Prevalence Study.1998 Jul 12(4):304-09. doi.org/10.1111/j.1939-1676.1998.tb02126. PMID: 9686391; Hypomagnesemia in 188 Dogs:A Hospital Population Prevalence Study**
- **Drobatz, K.J., Casey, K.K.Eclampsia in dogs:31 cases (1995-1998). JAVMA.2000 Jul 15;217(2):216-19. doi.org/10.2460/javma.2000.217.216. PMID: 10909462;Eclampsia in dogs:31 cases (1995-1998).**
- **Davidson, A.P., Reproductive Causes of Hypocalcemia. Top Companion Anim Med.2022 Nov 27(4):165-66. doi.org/10.1053/j.tcam.2012.09.002. PMID: 23415384. Reproductive Causes of Hypocalcemia-Science Direct**

Are there studies regarding the specific nutrition requirements during pregnancy and lactation for breeding females?

The 2006 National Research Council (NRC) provides comprehensive guidelines for nutrient requirements during pregnancy and lactation. More recent literature continues to support life stage– and reproductive status–specific feeding strategies to optimize fertility, support healthy gestation, sustain lactation, and promote neonatal growth. Diets formulated for breeding and gestation that are enriched in high-quality protein, essential fatty acids, and select micronutrients have been associated with improvements in reproductive performance, including increased litter size, enhanced milk quality and yield, and improved puppy growth and survival.

Dietary carbohydrates play an important role in maintaining euglycemia during late gestation and lactation and may contribute to improved neonatal viability. Additionally, diets enriched in marine-derived n-3 fatty acids have been associated with reduced serum cholesterol, triglyceride, and lipoprotein concentrations, suggesting that fatty acid composition influences lipid metabolism during reproductive and early developmental periods in dogs.

Suggested documentation:

- **Orlandi R, Vallesi E, Calabrò S, Vastolo A, Musco N, Troisi A, Polisca A, Lombardi P, Cutrignelli MI. Effects of Two Commercial Diets on Several Reproductive Parameters in Bitches: Note One-From Estrous Cycle to Parturition. Animals (Basel). 2020 Dec 25;11(1):23. doi: 10.3390/ani11010023. PMID: 33375531; PMCID: PMC7824412. Effects of Two Commercial Diets on Several Reproductive Parameters in Bitches: Note One—From Estrous Cycle to Parturition - PMC**
- **Calabrò S, Vastolo A, Musco N, Lombardi P, Troisi A, Polisca A, Vallesi E, Orlandi R, Cutrignelli MI. Effects of Two Commercial Diets on Several Reproductive Parameters in Bitches: Note Two-Lactation and Puppies' Performance. Animals (Basel). 2021 Jan 13;11(1):173. doi: 10.3390/ani11010173. PMID: 33450854; PMCID: PMC7828350. Effects of Two Commercial Diets on Several Reproductive Parameters in Bitches: Note Two—Lactation and Puppies' Performance - PMC**
- **Romsos DR, Palmer HJ, Muiruri KL, Bennink MR. Influence of a low carbohydrate diet on performance of pregnant and lactating dogs. J Nutr. 1981 Apr;111(4):678-89. doi: 10.1093/jn/111.4.678. PMID: 7218040. Influence of a low carbohydrate diet on performance of pregnant and lactating dogs - PubMed**
- **Wright-Rodgers AS, Waldron MK, Bigley KE, Lees GE, Bauer JE. Dietary fatty acids alter plasma lipids and lipoprotein distributions in dogs during gestation, lactation, and the perinatal period. J Nutr. 2005 Sep;135(9):2230-5. doi: 10.1093/jn/135.9.2230. PMID: 16140903. Dietary Fatty Acids Alter Plasma Lipids and Lipoprotein Distributions in Dogs during Gestation, Lactation, and the Perinatal Period - ScienceDirect**
- **Kim HT, Wakshlag JJ. Nutrition and Theriogenology: A Glimpse Into Nutrition and Nutritional Supplementation During Gestation, Lactation, Weaning and Breeding Dogs and Cats. Vet Clin North Am Small Anim Pract. 2023 Sep;53(5):1083-1098. doi: 10.1016/j.cvsm.2023.05.003. Epub 2023 Jun 21. PMID: 37353417. Nutrition and Theriogenology: A Glimpse Into Nutrition and Nutritional Supplementation During Gestation, Lactation, Weaning and Breeding Dogs and Cats - ScienceDirect**

What scientific evidence is there regarding the impact of breeding age on the health of breeding females?

There is limited research evaluating the impact of breeding age on the health of breeding dogs. Emerging studies examining epigenetic markers (e.g., DNA methylation–based biological age) in relation to phenotypic age and offspring outcomes may provide further insight. Currently, more data are available regarding the effects of stud age than bitch age.

First pregnancy in bitches older than six years is generally considered higher risk due to increased likelihood of reproductive complications. Females should reach full physical maturity

prior to first breeding. In addition, compliance with health screening recommendations—such as Orthopedic Foundation for Animals (OFA) hip evaluations—typically necessitates delaying breeding until at least two years of age, when definitive hip certification can be obtained.

Suggested documentation:

- **C.A. Johnson, Pregnancy management in the bitch, Theriogenology, Volume 70, Issue 9, 2008, Pages 1412-1417, ISSN 0093-691X, https://doi.org/10.1016/j.theriogenology.2008.09.009. Pregnancy management in the bitch - ScienceDirect**
- **Pamela S. Haney, Robyn R. Wilborn, Breeding Program Management, Veterinary Clinics of North America: Small Animal Practice, Volume 51, Issue 4, 2021, Pages 891-904, ISSN 0195-5616, ISBN 9780323791120, https://doi.org/10.1016/j.cvsm.2021.04.007. Breeding Program Management - ScienceDirect**

What, if any, impact does the number and frequency of litters have on the health of female dogs? Are there studies evaluating the impact of breed size on the health and breeding of female dogs?

We know of no large, controlled longitudinal study in dogs that directly compares female health outcomes (e.g., eclampsia, metabolic disorders, longevity) by number of litters alone or quantifies the impact of short versus long interlitter intervals on metabolic or reproductive health in breeding females. This gap has been noted in reproductive science and veterinary welfare discussions and is a recognized area for further research. Direct studies focused solely on breeding female reproductive health by size are limited. Evidence would come from research related to overall health, longevity and reproductive traits across breeds. Reproduction puts strain on the body – both in the physical carrying of fetuses (increased body weight putting stress on joints, pressure on other organs and body wall from fetal growth causing enlargement of the uterus), and pull of nutrients away from the dam in order to supplement the growth and development of fetuses. Female breeding dogs can be bred without skipping cycles provided they are kept in optimal health and are able to maintain or return to good body condition between pregnancies.

What scientific evidence is there regarding the impact of heritable defects on the health of breeding females?

Extensive literature, including textbooks and specialty journals, addresses the impact of heritable defects on the health of breeding dogs. Commercial breeders and breed organizations should collaborate with veterinary geneticists to promote informed breeding strategies aimed at minimizing the expression of inherited diseases. Population-level studies in purebred dogs show that reduced genetic diversity and increased homozygosity elevate

the risk of expressing deleterious recessive alleles. In breeding females, this may manifest as increased disease burden, compromised immune function, or reduced reproductive longevity.

Selective breeding programs have demonstrated measurable success in reducing the prevalence of certain genetic disorders. For example, targeted efforts in Bedlington Terriers have markedly reduced copper storage disease. In Doberman Pinschers, the reported prevalence of dilated cardiomyopathy has decreased substantially over several decades, from approximately 75% to less than 15% in some monitored populations. Similarly, hyperuricosuria has been largely reduced in European Dalmatian populations through informed breeding initiatives.

Direct input from veterinary geneticists working with breed groups would provide more detailed data on disease prevalence trends and the long-term impact of these programs. The cost of genetic testing is variable and depends on the recommended genetic tests for each dog breed. When used correctly, genetic testing of breeding females allows for appropriate pairing of dogs for mating and leads to healthier offspring. This also leads to an overall healthier breeding population and dog population in general.

Suggested documentation:

- **Donner J, Freyer J, Davison S, Anderson H, Blades M, Honkanen L, et al. Genetic prevalence and clinical relevance of canine Mendelian disease variants in over one million dogs. PLoS Genet. 2023 Feb 27;19(2):e1010651. doi:10.1371/journal.pgen.1010651. PMID: 36862961; PMCID: PMC9984207. The challenges of pedigree dog health: approaches to combating inherited disease | Companion Animal Health and Genetics | Springer Nature Link**
- **Haywood S, Swinburne J, Schofield E, Constantino-Casas F, Watson P. Copper toxicosis in Bedlington terriers is associated with multiple independent genetic variants. Vet Rec. 2023;193(4):e2832. doi:10.1002/vetr.2832. PMID: 37038639. Copper toxicosis in Bedlington terriers is associated with multiple independent genetic variants - PubMed**
- **Farrell LL, Schoenebeck JJ, Wiener P, Clements DN, Summers KM. The challenges of pedigree dog health: approaches to combating inherited disease. *Canine Genet Epidemiol.* 2015;2:3. doi:10.1186/s40575-015-0014-9. PMID: 26401331; PMCID: PMC4579364. The challenges of pedigree dog health: approaches to combating inherited disease - PubMed**

Socialization and Exercise of Dogs

Socialization is a critical component of canine welfare because dogs are highly social animals whose well-being depends not only on the absence of negative experiences but also on the presence of positive social interactions. Mellor (2016) emphasizes that modern welfare frameworks require providing animals with opportunities for positive experiences to achieve "a life worth living," which necessarily includes meaningful social engagement. Hubrecht et al. (1995) highlight that dogs in human care require appropriate social contact—both with conspecifics and humans—to prevent behavioral abnormalities and stress-related outcomes. Similarly, Heath and Wilson (2014) underscore the importance of environmental and social enrichment in both home and kennel settings, noting that structured socialization and interaction are essential for emotional stability, behavioral health, and overall welfare. Collectively, these works support the conclusion that adequate, positive socialization is fundamental to promoting psychological well-being and preventing welfare compromise in dogs. The articles below are good all-around references on considerations for dog welfare and moving beyond removing the negative to enhancing the positive.

Suggested documentation:

- **Mellor DJ. Updating animal welfare thinking: Moving beyond the "Five Freedoms" towards "a life worth living."** ***Animals (Basel).*** **2016;6(3):21. doi:10.3390/ani6030021. PMID: 27102171; PMCID: PMC4810049.**
- **Hubrecht R, Wickens S, Kirkwood J, Serpell J. The welfare of dogs in human care. In: Serpell J, editor.** ***The Domestic Dog: Its Evolution, Behavior and Interactions with People.*** **Cambridge: Cambridge University Press; 1995. p. 180–198**
- **Heath S, Wilson C. Canine and feline enrichment in the home and kennel: A guide for practitioners.** ***Vet Clin North Am Small Anim Pract.*** **2014;44(3):427–449. doi:10.1016/j.cvsm.2014.01.003. Canine and feline enrichment in the home and kennel: A guide for practitioners.**

Are there studies assessing the socialization needs of dogs, including interactions with humans and compatible dogs?

Research asserts that human-animal and animal-animal interactions can aid in heightened presence of complex behaviors like exploring their environment and trainability and decrease unwanted behaviors. Puppy socialization practices play a large role in the development of well-adjusted adult dogs that display few undesirable behaviors, and which can establish a positive, lifelong relationship with their owner. Age-appropriate socialization practices should begin within a few days of birth, and should extend well into adulthood. These practices should aim to provide exposure to many of the types of experiences, people, and objects that the dog is likely to encounter over the course of its life, in a controlled and pleasant way. When applied to the demographic of concern, it becomes clear that higher levels of enrichment lead to happier and healthier animals overall. Females bred in

commercial breeding facilities often have lower levels of happiness and higher amounts of health problems later on even once given more socialization. Negative life circumstances, such as staying in shelters, also drives down animal mental health even after getting removed from those environments. Broadly, in order to have healthier and happier animals with fewer birth-related issues, it is imperative to provide external stimulation as early as possible in life, in the forms of socialization (both with humans and other animals) and various kinds of toys while giving ample space to explore.

Research shows that human–animal and animal–animal interactions can increase the expression of complex behaviors, such as exploration and trainability, while reducing undesirable behaviors. Early socialization plays a critical role in developing well-adjusted adult dogs that display fewer behavioral problems and form positive, healthy relationships. Age-appropriate socialization should begin within the first few days of life and continue into adulthood. These practices should expose dogs to a variety of experiences, people, and objects they are likely to encounter throughout life in a controlled and positive manner.

Higher levels of environmental enrichment are associated with improved overall welfare. Dogs bred in commercial breeding facilities may experience lower welfare and higher rates of health issues later in life, even when socialization opportunities increase later on. Similarly, adverse environments such as shelters can negatively affect animal mental health even after removal from those conditions. Overall, promoting early and consistent enrichment—including socialization with humans and other animals, access to toys, and adequate space for exploration—is essential for supporting healthier, happier animals and reducing birth-related and developmental issues.

Suggested documentation:

- **Hubrecht RC. A comparison of social and environmental enrichment methods for laboratory housed dogs. *Appl Anim Behav Sci.* 1993;37(4):345–361. doi:10.1016/0168-1591(93)90123-7. A comparison of social and environmental enrichment methods for laboratory housed dogs - ScienceDirect**
- **McMillan FD, Duffy DL, Serpell JA. Mental health of dogs formerly used as 'breeding stock' in commercial breeding establishments. *Appl Anim Behav Sci.* 2011;135:86–94. doi:10.1016/j.applanim.2011.09.006 Mental health of dogs formerly used as 'breeding stock' in commercial breeding establishments - ScienceDirect**
- **Kis A, Tóth K, Langner L, Topál J. Dogs' social susceptibility is differentially affected by various dog–human interactions: A study on family dogs, former shelter dogs and therapy dogs. *PLoS One.* 2024;19(3):e0300889. doi:10.1371/journal.pone. 0300889. PMID: 38512916; PMCID: PMC10956857. Dogs' social susceptibility is differentially affected by various dog–Human interactions. A study on family dogs, former shelter dogs and therapy dogs | PLOS One**

Are there studies assessing the health and wellbeing of singly housed dogs?

Social deprivation in urban pet dogs is an understudied welfare concern with implications for well-being and stress regulation. Controlled research has shown that social housing (pairing compatible dogs) reduces both behavioral and physiological indicators of stress in shelter dogs during the early intake period. These findings underscore the importance of social interaction for canine welfare and suggest that even short-term pair housing can improve psychological well-being in shelter environments. Additional evidence indicates that social isolation and restricted physical space produce sustained behavioral changes consistent with chronic stress, further emphasizing the need for adequate social and environmental enrichment.

Suggested documentation:

- **Barnard S, Pedernera C, Candeloro L, Ferri N, Velarde A, Dalla Villa P. Development of a new welfare assessment protocol for practical application in long-term dog shelters. *Vet Rec.* 2016;178(1):18. doi:10.1136/vr.103336. PMID: 26612859. Development of a new welfare assessment protocol for practical application in long-term dog shelters**
- **Beerda B, Schilder MBH, van Hooff JARAM, de Vries HW, Mol JA. Chronic stress in dogs subjected to social and spatial restriction. I. Behavioral responses. *Physiol Behav.* 1999;66(2):233–242. doi:10.1016/S0031-9384(98)00289-3. PMID: 10336149. Chronic stress in dogs subjected to social and spatial restriction. I. Behavioral responses.**
- **Grigg EK, Nibblett BM, Robinson JQ, Smits JE. Evaluating pair versus solitary housing in kennelled domestic dogs (*Canis familiaris*) using behaviour and hair cortisol: a pilot study. *Vet Rec Open.* 2017;4(1):e000193. doi:10.1136/vetreco-2016-000193. PMID: 28890790; PMCID: PMC5574456. Evaluating pair versus solitary housing in kennelled domestic dogs (*Canis familiaris*) using behaviour and hair cortisol: a pilot study**
- **Grynkiewicz A, Reinholz A, Imbir K. Disconnected lives: social networks and emotional regulation in domestic dogs. *Animals (Basel).* 2026;16(3):398. doi:10.3390/ani16030398. Disconnected Lives: Social Networks and Emotional Regulation in Domestic Dogs.**
- **Hecker G, Martineau K, Scheskie M, Hammerslough R, Feuerbacher EN. Effects of single- or pair-housing on the welfare of shelter dogs: Behavioral and physiological indicators. *PLoS One.* 2024;19(6):e0301137. doi:10.1371/journal.pone.0301137. PMID: 38650713; PMCID: PMC10498765. Effects of single- or pair-housing on the welfare of shelter dogs: Behavioral and physiological indicators | PLOS One**

What scientific information is available regarding the exercise needs of dogs, including considerations of the animal's age, breed, and health, the type of exercise, and exercise frequency and duration?

Scientific evidence demonstrates that dogs' exercise needs vary according to age, breed, health status, and activity type, and that adequate physical activity is essential for both physical and cognitive health. A clear association between reduced exercise frequency and increased risk of overweight and obesity has been identified, underscoring the importance of tailored activity programs to prevent a major welfare concern. Data from the Dog Aging Project has shown that higher levels of physical activity were strongly associated with improved cognitive outcomes and lower rates of cognitive dysfunction in older dogs, indicating that exercise supports mental as well as physical health. Additionally, substantial breed-related variation in natural activity levels has been shown, supporting the consensus that exercise requirements are not uniform across dogs and must consider genetic background, size, and functional type. Collectively, these findings support individualized exercise recommendations based on breed, age, and health to promote optimal welfare.

Suggested documentation:

- **Bray EE, Raichlen DA, Forsyth KK, Promislow DEL, Alexander GE, MacLean EL, et al.; Dog Aging Project Consortium. Associations between physical activity and cognitive dysfunction in older companion dogs: results from the Dog Aging Project. *GeroScience.* 2023;45(2):645–661. doi:10.1007/s11357-022-00655-8. PMID: 36129565; PMCID: PMC9886770. Dog Aging Project Consortium. Associations between physical activity and cognitive dysfunction in older companion dogs: results from the Dog Aging Project.**
- **German AJ, Blackwell E, Evans M, Westgarth C.Overweight dogs exercise less frequently and for shorter periods: results of a large online survey of dog owners from the UK. J Nutr Sci. 2017;6:e11. doi:10.1017/jns.2017.6. PMID: 28620486; PMCID: PMC5465938 Overweight dogs exercise less frequently and for shorter periods: results of a large online survey of dog owners from the UK.**
- **Pickup E, German AJ, Blackwell E, Evans M, Westgarth C. Variation in activity levels amongst dogs of different breeds: results of a large online survey of dog owners from the UK. *J Nutr Sci.* 2017;6:e10. doi:10.1017/jns.2017.7. PMID: 28620485; PMCID: PMC5465859 Variation in activity levels amongst dogs of different breeds: results of a large online survey of dog owners from the UK.**
- **Taylor KD, Mills DS. The effect of the kennel environment on canine welfare: a critical review of experimental studies. *Anim Welf.* 2007;16(4):435–447. The effect of the kennel environment on canine welfare: a critical review of experimental studies.**

Are there studies evaluating the effects of human interaction on the health and welfare of dogs in breeding facilities?

Research examining dogs housed in commercial breeding and kennel environments indicates that human interaction plays an important role in canine welfare. Studies show that structured, positive human contact beyond routine husbandry can increase affiliative behavior, exploratory activity, and sociability toward unfamiliar people, suggesting improved emotional states. Conversely, dogs raised or housed with limited social exposure to humans often display increased fearfulness, stress-related behaviors, and reduced responsiveness to social cues. Broader kennel welfare research similarly supports that consistent, positive human interaction helps mitigate stress and improve behavioral outcomes. Overall, the evidence suggests that regular, enriched human contact is a critical component of maintaining psychological well-being in dogs housed in breeding facilities.

Suggested documentation:

- **Baqueiro-Espinosa U, Lo TH, Hunter R, Donnelly P, McEvoy V, Crump A, Arnott G. Positive human interaction improves welfare in commercial breeding dogs: Evidence from attention bias and human sociability tests. *Appl Anim Behav Sci.* 2023;262:105904. doi:10.1016/j.applanim.2023.105904. Positive human interaction improves welfare in commercial breeding dogs: Evidence from attention bias and human sociability tests.**
- **German AJ, Blackwell E, Evans M, Westgarth C. Overweight dogs exercise less frequently and for shorter periods: results of a large online survey of dog owners from the UK.** *J Nutr Sci.* 2017;6:e11. doi:10.1017/jns.2017.6. **PMID: 28620486; PMCID: PMC5465938. Can you spare 15 min? The measurable positive impact of a 15-min petting session on shelter dog well-being**
- **McMillan FD, Duffy DL, Serpell JA. Mental health of dogs formerly used as "breeding stock" in commercial breeding establishments. *Appl Anim Behav Sci.* 2011;135(1–2):86–94. doi:10.1016/j.applanim.2011.09.006. Mental health of dogs formerly used as 'breeding stock' in commercial breeding establishments**
- **Pinelli C, Scandurra A, Mastellone V, D'Aniello B, Pacifico E, Di Lucrezia A, et al. Unfamiliar human-induced social buffering effect in kennel-residing Australian Cattle Dogs. *Appl Anim Behav Sci.* 2023;267:106039. doi:10.1016/j.applanim. 2023.106039. Unfamiliar human-induced social buffering effect in kennel-residing Australian Cattle Dogs.**
- **Pritchett M, Barnard S, Croney C. Socialization in commercial breeding kennels: the use of novel stimuli to measure social and non-social fear in dogs. *Animals (Basel).* 2021;11(3):890. doi:10.3390/ani11030890. PMID: 33804748; PMCID: PMC8003938. Socialization in commercial breeding kennels: the use of novel stimuli to measure social and non-social fear in dogs.**
- **Valsecchi P, Pattacini O, Beretta V, Bertozzi J, Zannoni S, Viggiani R, Accorsi**

PA. Effects of human social enrichment program on behaviour and welfare of sheltered dogs. In: Proceedings of the 6th International Veterinary Behaviour Meeting; 2007; Brescia, Italy. p. 123–124. Effects of human social enrichment program on behaviour and welfare of sheltered dogs.

We appreciate the opportunity to comment and look forward to continued engagement with USDA on this issue.

Best regards,

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