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GOLDEN RETRIEVER Update

A NESTLÉ PURINA PUBLICATION DEDICATED TO GOLDEN RETRIEVER ENTHUSIASTS

VOLUME 19 | FALL 2021



PREPARING FOR PREGNANCY Nutrition & Health Concerns



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GOLDEN RETRIEVER BREEDERS ASK EXPERTS ABOUT DOG BREEDING & NUTRITION

Canine reproduction is a performance state much like athletic performance. Just as you condition and train a Golden Retriever athlete, preparing for pregnancy nutritionally and from a health standpoint is important.

The nutritional demands of pregnancy and lactation are achieved by feeding a high-quality, complete and balanced dog food. Purina Senior Research Nutritionist Arleigh Reynolds, DVM, PhD, DACVN, a board-certified veterinary nutritionist, says, “There are many benefits to feeding an all-life stages diet such as one of the *Purina Pro Plan SPORT* Performance 30/20 formulas. The higher protein and nutrition support a dog’s muscle to better support work, though it takes possibly two to three months for those adaptations to occur. If you switch from a maintenance diet to a performance diet, you’ve got that lag time before you get the full benefit of the food, so you want to do it in the very early stages of pregnancy.

When the mom reaches a point in the last trimester when she is eating a lot of food, she should already be well-adapted to that diet.”

Dr. Reynolds suggests:

- Do not add supplements or other foods to the bitch’s diet when you feed a high-quality, complete and balanced dog food. Doing so could throw off the food’s nutrient balance. Developing fetuses are sensitive to even small changes in nutrient levels.
- A high-quality, all-life stages dog food can be fed to bitches year-round and is ideal for weaning puppies. Monitor a bitch’s body condition to keep her healthy and fit and also monitor the rate of growth of puppies to reduce the risk of metabolic bone diseases, such as osteochondrosis dissecans and hip dysplasia.

Likewise, Andrea Hesser, DVM, DACT, a board-certified veterinary reproduction specialist who



practices at Josey Ranch Pet Hospital in Carrollton, Texas, affirms the positive impact that comes from monitoring body condition, feeding a healthy diet, practicing good basic pregnancy management, and adhering to deworming regimens.

“It also is important to stay up on vaccines,” she says. “You should update a bitch’s vaccinations ahead of time if you know her vaccinations will be due around her estrus cycle, pregnancy or into lactation. Keep her on preventive medications for heartworms, fleas and ticks and be sure to give those that have been studied for safety in pregnant dogs and their fetuses/puppies.”

In this issue of the *Golden Retriever Update*, we invited breeders to ask questions related to breeding, pregnancy, nutrition, and raising puppies. Dr. Reynolds and Dr. Hesser share their insights and expertise here.



Dr. Arleigh Reynolds, a board-certified veterinary nutritionist



Dr. Andrea Hesser, a board-certified veterinary reproduction specialist

PREBREEDING HEALTH SCREENINGS & NUTRITION DURING PREGNANCY

Q: Many researchers of the condition dilated cardiomyopathy (DCM) advise us not to feed boutique diets or grain-free foods to possibly help prevent this condition. If a Golden Retriever bitch has not been fed these foods, is an echocardiogram screening suggested prior to breeding? *Mary Beth Konesky of East Amherst, New York, breeder of over 35 American-Canadian champions, one of the first rally champions, and co-owner of the current No. 1 Golden Retriever all-systems, MBISS GCHS Chestnut Then Came You*

Dr. Hesser: Some veterinary cardiologists and nutritionists advise not to feed grain-free, exotic or boutique diets because of their possible link to DCM. In addition, there are other cardiac conditions such as subvalvular aortic stenosis (SAS) that are important to be aware of prior to breeding a bitch. In fact, the Golden Retriever Club of America (GRCA) includes a congenital, advanced or basic cardiac examination by a cardiologist as part of the OFA CHIC health tests for the breed. Congenital heart defects, those that are present at birth, may not create a murmur or apparent heart disease in a young dog. However, these conditions may be screened for prior to breeding with an echocardiogram, or an ultrasound of the heart. Being aware of any heart disease in a bitch is important going into pregnancy due to the extra work placed on the heart to support the bitch and her litter. Even a minor heart problem may advance into a serious or life-threatening situation.

Q: Golden Retrievers are susceptible to the autosomal recessive skin condition ichthyosis, which prevents the outer layer of the epidermis from forming properly and causes thick, dark skin and excessive flaking. Should Golden Retrievers be screened for this condition prior to breeding? *Mary Beth Konesky*

Dr. Hesser: Screening for the type of ichthyosis (ICH-1) that you describe currently isn’t advised as part of the OFA CHIC requirements for Golden Retrievers. A large percentage of Golden Retrievers with American pedigrees that test as affected do not have clinical signs or they have mild, transient signs in early puppyhood. There may be a modifying genetic factor altering gene expression in these dogs. Thus, the GRCA Health & Genetics Committee recommends prebreeding testing for ICH-1 primarily for dogs that have clinical signs and for dogs with close relatives known to be carriers, affected or have clinical signs. A genetic test for the autosomal recessive disease can be used to select the best possible match genetically for your dog or bitch when breeding. ICH-2 is a more serious disease that can include weight loss, lethargy, chronic skin infections, and stunted growth, in addition to flaking skin. A genetic test for this uncommon autosomal recessive disease can be used to gradually eliminate this gene variant from the breed population if you know a dog’s status as affected, carrier or clear.

Q: Should we supplement our bitches with a prenatal supplement, particularly one with folic acid to help prevent cleft palate in puppies? *Nona Bauer of LaBelle, Missouri, author of Golden*

BODY CONDITION SCORE & PUPPY WEIGHT: IMPORTANT MARKERS TO GUIDE NUTRITION FOR BITCHES & PUPPIES

The importance of keeping bitches in a healthy body condition throughout pregnancy and of weighing newborn puppies daily for the first three weeks cannot be emphasized enough, says Purina Senior Research Scientist Arleigh Reynolds, DVM, PhD, DACVN, a board-certified veterinary nutritionist.

“During pregnancy, puppy growth is slow until the last trimester and then they grow exponentially,” Dr. Reynolds says. “During the early stages of pregnancy, a female should be fed her regular amount of food to maintain a body condition score of 5 out of 9.

“During the last trimester, gradually increase to feeding 1¼ to 1½ times more food than she was eating before pregnancy until she whelps. Review her body condition score and keep her at a 5 to 5½ score. Otherwise if she becomes obese, she may experience dystocia and have difficulty delivering her puppies.”

The amount of food fed during lactation is highly dependent on the number of puppies. “If she has only one puppy, the increase isn’t going to be that great. If she has four to eight puppies, a significant food increase is needed,” says Dr. Reynolds. “By peak lactation, around three weeks after whelping, a female should be fed 30 percent of her pre-pregnancy intake for each puppy. This caloric requirement is only needed for three to four weeks. The

mother’s food demand starts to level off and decrease when puppies start eating solid food.”

The single most important way to monitor puppy health is to weigh puppies every day, Dr. Reynolds says. “Newborn puppies weigh from 12 to 16 ounces each. Oftentimes they will lose a little weight the first day, and that’s normal because they are learning to suckle, but by day two, their body weight should be bigger than it was at birth,” he says. “They should gain weight every day.”

Puppies that stay the same weight for two days in a row — a warning sign that they are not getting enough food — require intervention. “Try giving the pup some extra time nursing with the mom and separating the other pups,” says Dr. Reynolds. “The pups may just be a little smaller and not as competitive at the nipple. You may have to supplement the pup with milk replacer using a nursing bottle if it is strong enough or try tube feeding, though never use an eye dropper due to risk of aspiration.”

Dr. Reynolds notes that between 25 to 30 percent of puppies die in the first two weeks. “Some puppy deaths are due to development problems, but some puppies die simply because they don’t get enough nursing,” he says. “Those are the ones we can identify and help just by weighing them every day until they are 3 weeks old. By 7 to 10 days of age, puppies should double their birth weight.”



Retrievers for Dummies and The World of the Golden Retriever and breeder of Golden Retrievers active in obedience, field trials, hunt tests, and pet therapy

Dr. Reynolds: You don't need to supplement the diet of a breeding female if you are feeding a high-quality, all-life stages food, such as a *Purina Pro Plan SPORT Performance 30/20 Formula* or a *Purina Pro Plan SPORT Active 27/17 Formula*. It is absolutely true that a dog needs a little more folic acid during pregnancy to prevent things like neural tube defects and cleft palate in puppies. These all-life stages diets meet the requirements to support normal pregnancy and puppy growth, so there is no need to supplement.

Q: If a litter is at risk for allergies, would feeding a hydrolyzed diet to the dam during pregnancy and to puppies during weaning help to reduce the risk of allergies later in life? *Rhonda Hovan of Akron, Ohio, breeder of Golden Retrievers under the Faera prefix and research facilitator for the Golden Retriever Club of America*

Dr. Reynolds: We tend to see dogs developing food allergies from 3 to 6 years of age, so the way we feed the mother and the puppies isn't likely to affect their potential for developing allergies. This could be true for dogs that develop allergies at less than 2 years of age, though this has not been studied in dogs. Hydrolyzed diets are not as high in energy and protein as is needed for a pregnant dog and her puppies.

Q: Golden Retriever bitches appear to sometimes develop excessive amniotic or intra-uterine fluid during pregnancy that can be associated with maternal and puppy deaths. I heard that feeding a grain-free diet in the last month of pregnancy can help reduce the amount of carbohydrates and thus may help reduce the fluid associated with this condition. I tried this, and then in the last week of pregnancy I also fed deboned rotisserie chicken, cottage cheese and dandelion root, a natural diuretic to help reduce fluid retention. Using this method, the puppies weighed only 12 ounces at birth compared with a normal weight of 16 ounces. After this, I went back to feeding the all-life stages *Purina Pro Plan SPORT Performance 30/20 Salmon & Rice Formula* throughout pregnancy. The puppies in this litter weighed 16 ounces. What are your thoughts on this practice? *Tonya Struble of Lake Stevens, Washington, breeder under the Rush Hill prefix of over 80 champions including Best in Show, Best in Specialty Show and High in Trial winners*



Dr. Reynolds: The birth weight of puppies is a very high indicator — one of the best indicators we have — of puppy health. Low birth weight is directly associated with morbidity and mortality. When you are looking at that much difference in weight, basically one-quarter of the puppy's birth weight, it is the difference between a puppy that is likely to thrive and one that may really struggle. If the mother dog looks like she's getting awfully big in her abdomen, it's best to consult your veterinarian who can diagnose the condition and treat it.

Dr. Hesser: Most bitches with this condition only require monitoring and occasionally may need a preterm delivery. Sometimes the fluid accumulation can result in other serious complications, such as pregnancy ketosis in which bitches do not receive enough carbohydrates to support the increasing litter size. Per a review of current literature, there isn't an association for grain-free food causing a reduction in the abdominal fluid of these pregnant dams. Carbohydrates are required for optimal growth and development during pregnancy, so reducing the carbohydrates may have resulted in the smaller birth weights. It also could have been differences between



pregnancies, sires/dams or other variances. When using natural diuretic products, you should only use them under the supervision of a veterinarian, as they can have an impact similar to drugs and can stress the kidneys, dehydrate a bitch and potentially kill her. Be cautious of everything going into your pregnant dog. Notably, it is controversial to use diuretics during pregnancy due to a potential harmful effect.

POSTWHELPING MATERNAL CARE & NEONATAL NUTRITION

Q: What supplements should you give pregnant and lactating bitches and puppies up to 8 weeks of age? *Brianna Bischoff of Cypress, Texas, breeder under the Emery prefix of 50 plus champions and grand champions, including Best in Show and Best in Specialty Show winners and Show Dog Hall of Fame inductees*

Dr. Reynolds: None, if you are feeding a high-quality, complete and balanced food. It is much better to start with a great diet that supports moms through pregnancy and lactation and puppies through weaning and growth than it is to add supplements and other foods to a minimal diet. Every time you add something to a diet, you risk putting it out of balance. Some breeders want to add cottage cheese to a bitch's diet, but it has a lot of phosphorus and can throw off the calcium-phosphorus balance of the food.

Q: What can a breeder do to prevent mastitis, the painful inflammation of the mammary glands caused by bacterial infection? *Brianna Bischoff*

Dr. Hesser: Cleanliness is the best preventive for mammary gland infections. A scrupulously clean

whelping box is paramount. If you stimulate mammary glands to check if the bitch is producing milk, do so only as needed and make sure to be as clean as possible to reduce the risk of ascending bacteria. Checking her glands regularly for lumps, engorgement, warmth, color changes, or changes in milk color or texture is a good idea.

Dr. Reynolds: It is important to manage how you feed the mother as puppies are weaned because she is making a lot of milk. If you abruptly take the puppies away, she can get mastitis. I feed the mother at the same time as the puppies in a separate area to control how much she eats and to monitor how much they are eating. When the puppies are from 5 to 7 weeks old, I increase the amount of time they are separated from the mother, so they are not nursing very much. Three things stimulate milk production: nursing, food and water. I would not decrease a mother's water supply; however, if we decrease the nursing stimuli and start cutting her food back, we can get her mammary glands to dry up at about the same time as the puppies are weaned without the risk of mastitis.

Q: Our puppy raisers often feed *Purina Pro Plan* Puppy Chicken & Rice, but the puppy buyers may feed *Pro Plan* Puppy Shredded Blend Chicken & Rice. Is feeding different *Pro Plan* puppy foods a problem for puppies? *Jackie Mertens of Palm Bay, Florida, breeder-owner-handler of NAFC-FC Topbrass Cotton, the only Golden Retriever to win the National Amateur Field Trial Championship*

Dr. Reynolds: When you are looking at foods to feed puppies, you want to make sure you are feeding a food appropriate for all-life stages or for puppies.

Whenever you are transitioning a dog from one diet to another, you want to make the change slowly over two weeks or so because it takes a while for their microbiome and gastrointestinal tract to adjust to the new diet. Even if the new diet is a great diet, you are going to get some disturbances. If they are too abrupt, you can end up with diarrhea.

Q: Living in the Pacific Northwest, where mild temperatures and damp conditions are ideal for coccidiosis, it is not uncommon for puppies to become affected with coccidia around 10 or 11 weeks of age and go off their puppy food. When this happens, I feed them the all-life stages *Purina Pro Plan SPORT Performance 30/20 Salmon & Rice Formula*. After they recover from coccidia, I often have trouble getting them to go back to their puppy food. My latest litter was weaned on the all-life stages food, and they never went off the food. Do pups fare better going straight to the all-life stages food rather than feeding a puppy food? *Tonya Struble*

Dr. Reynolds: When puppies get coccidiosis, their gastrointestinal system is affected, and they don't feel good. The *Pro Plan SPORT Performance* diets are super palatable, so puppies like them. They may associate the smell and taste of the puppy food with when they first got sick and have an aversion to the food. The key with Golden Retriever puppies is to be particularly careful not to let them grow too fast or get too heavy. The *Purina Pro Plan SPORT Performance* diets are a great food for raising puppies. Because these foods are higher in energy, it is important to watch and manage their growth and weight to prevent excessive rates that could lead to the risk of developing metabolic bone disease. You could consider feeding one of the *Purina Pro Plan Large Breed* puppy foods, which contain 28 percent protein and 18 percent fat, to promote a healthy growth rate. We can decrease by threefold the chances of puppies getting these disorders by how we feed them.

Q: If puppies are weaned on a puppy food, at what age do you recommend switching these dogs to an all-life stages *Purina Pro Plan* food? Is this the best way to feed puppies? *Nona Bauer*

Dr. Reynolds: You can make that transition at any point with one of the *Purina Pro Plan* all-life stages foods. I like to make the transition earlier than most people because these foods are in the range of 26 to 30 percent protein and 16 to 20 percent fat, making them really nice diets to transition puppies on. I usually

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make the change about 3 months of age, though we've raised many puppies right from weaning on these all-life stages *Pro Plan* diets and had great success. You want to make sure the diet puppies are fed is approved for all-life stages and to watch puppies to make sure they aren't growing too rapidly. If you do those two things, your chances of ending up with a really healthy adult dog are dramatically increased.

Q: Does the bacteria source in a probiotic impact the success of the supplement in reducing stress diarrhea? *Purina Pro Plan Veterinary Supplements FortiFlora Canine Nutritional Supplement* is recommended for giving to litters of puppies to help with stress diarrhea. What is the evidence behind this claim? *Dr. Kaye Fuller of Paige, Texas, breeder of KC Golden Retrievers, including five dogs that competed in National Open/Amateur Retriever Field Trial Championships*

Dr. Reynolds: Yes, probiotics, or live beneficial bacteria, have very different properties giving them different health benefits. The type and amount of the bacteria used are extremely important. The probiotic contained in *FortiFlora, Enterococcus faecium SF68*, has a gastrointestinal and immune effect. At Purina, we conducted two efficacy trials to evaluate the benefits of SF68 in puppies fed a control diet or a diet supplemented with the probiotic from weaning through 1 year of age. These studies showed that during weaning, puppies fed SF68 had more stable microflora patterns than puppies fed the control food. ■

Purina appreciates the support of the Golden Retriever Club of America, particularly Rhonda Hovan, GRCA research facilitator, in helping to identify this topic for the *Golden Retriever Update*.

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