

FAQs for Owners and Potential Owners about the DNA Variant Gene Test

So you've been hearing about the DNA test for PLN and you've got questions. What is it? How do you use this information for your own Wheaten pet? What should you consider when getting a puppy?

Here are some questions we've encountered over the last few years:

- **What is this test about?**

Researchers at the University of Pennsylvania identified two "variant genes" associated with an increased risk of developing PLN and developed a cheek swab test to determine if a dog has 0, 1 or 2 of these genes.

- Dogs with no copies of the gene (aka "0" or "homozygous negative") have an exceedingly low chance of getting PLN. Remember that other diseases can cause PLN.
- Dogs with 2 copies of the gene (aka "2" or "homozygous positive") are at the highest risk of developing PLN. This doesn't mean the dog will get sick. In the research leading to this test, 16 of the 145 wheaten "2s" lived into their teens (over 13 years of age) with no sign of the disease.
- Dogs with 1 copy of the gene (aka "1" or "heterozygous") are at intermediate risk

It's important to remember this: **this test does NOT say whether a dog will or will not get PLN.** It says whether it has an increased risk of getting the disease.

- **Do breeders use this test?**

Yes! In the first 4½ years the test was available, over 3600 Wheatens were tested at Penn, and hundreds of others have been tested using commercial labs around the world. Data from Penn on those 3600 dogs show that from the first 1000 dogs tested to the most recent 700 (as of the fall of 2017) the incidence of "2s" has decreased as the incidence of "0s" has increased.

The Soft Coated Wheaten Terrier Club of America amended its Code of Ethics to require all breeders to use the test prior to breeding.

While responsible breeders are testing, it's important to know that breeding decisions are complicated. In addition to the results of this test, responsible breeders consider other factors related to physical health, temperament, Wheaten "type" and pedigrees when they breed. Therefore, not all breeders use the test the same way in their decision making.

- **Should I test my own Wheaten? I'm not planning on breeding her.**

First, start by reading about the DNA test and what the results mean at <http://www.scwtca.org/health/dnatest.htm> If you're looking for an absolute yes or no...the DNA test won't give it to you. It's just the relative risk of developing the disease.

Second, it's recommended all Wheatens continue to have regular blood tests and urinalysis since the DNA test is only for PLN; it tells nothing about risk for getting PLE or Addison's or any other disease. You can find information here: <http://www.scwtca.org/health/protocol-own.htm>

Finally, it's an individual choice... whether or not the information is something you find useful and want to know.

If you do test your dog, please be sure to do two things with the results. First, go to the Wheaten Health Survey at https://www.ofa.org/about/educational-resources/health-surveys#api_summary and fill out the information for your dog. Second, please submit your data to the Soft Coated Wheaten Terrier database at <http://scwtodb.org/SubmitData.aspx>, an archive for researchers, breeders and owners.

- **OMG, the lab reported my Wheaten is "Affected"...what should I do?**

Some labs use "affected" to mean the dog has both variants. **It does NOT mean the dog is sick or will get sick.** This genetic test only tells relative risk...meaning a dog with 2 variants is at a higher risk than a dog with no variants. Read on about what to do with a "2" dog.

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- **Hooray! My Wheaten is a 0 (or a “Clear”). No more annual testing, right?**

Sorry, no. This test is only for the risk of developing PLN...it has nothing to do with PLE or Addison’s Disease. You still need to test annually to be sure your dog is healthy.

- **What should I do if my Wheaten is a “1” or a “2”?**

The guidance from Dr. Meryl Littman, lead researcher at the University of Pennsylvania (now retired), is that 1s undergo the normal annual screening. Dogs who are 2s should start their annual screening at a year of age and increase to twice annually at age 4 or 5. If test results start to show abnormalities, early intervention may extend their lives. Read Dr. Littman’s recommendations here:

<http://www.scwtca.org/documents/health/PLN%20in%20SCWT%202016-08.pdf>

- **The lab reported my Wheaten as a “Carrier.” Since I’m not going to breed her, it doesn’t matter, right?**

Some labs use the term “Carrier” to mean the dog has only 1 copy of the variants...e.g., she’s a “1.” You should continue to do annual screening as discussed in the answer to **“What should I do if my Wheaten is a “1” or a “2”?** above

- **My Wheaten has already been diagnosed with PLN. Why should I do a genetic test?**

We’re sorry to hear your dog has been diagnosed. There are some reasons for testing. **First**, sometimes veterinarians see a Wheaten with some abnormal urinalysis results and automatically think “PLN” just because it’s a Wheaten. The additional information may help your veterinarian with his diagnosis. **Second**, this information will be helpful to our researchers so they can track how well the test aligns with “real world” health; any testing should be done through PennGen to be sure our researchers have it. Read Dr. Littman’s recommendations here: <http://www.scwtca.org/documents/health/PLN%20in%20SCWT%202016-08.pdf>

- **Should the puppies in a litter be tested before sale?**

You’ll find some responsible breeders test litters, some don’t. It’s a conversation you should have with the breeder to learn more. If the breeder has the results on both parents, he can provide information on what your puppy’s status might be...or you can go to the [Breeders’ Tool](#) on the SCWTCA website to understand it yourself.

- **Should I buy a puppy that is likely to be a heterozygote (a “1”)?**

Just as breeders have to consider a lot of things when they do a breeding, you should consider a number of factors when choosing a puppy: whether the breeders are reputable and reliable, the totality of the parents’ health, the puppy’s temperament.

A heterozygote has an “intermediate” chance of developing PLN. Over 40% of Wheatens tested so far are 1s...but historically only 10 to 15% of the breed has developed the disease.

He might get PLN but owners shouldn’t hold their breath and worry about it. So if you are otherwise comfortable with everything else, you just need to continue to be careful to do annual testing....just as any Wheaten owner should.

- **Should I buy a puppy that is likely to be a homozygous positive (a “2”)?**

Sounds worrisome, right? But remember: in the research leading to the test, 16 of the 62 geriatric control group of Wheatens (ages 14 -18) that were positives never developed symptoms of PLN.

But these dogs do require you to be diligent about testing. If a homozygous positive shows abnormal test results, your veterinarian may decide to start treatment early...a prescription diet and some medication...long before your Wheaten shows any symptoms. Early intervention can result in additional, quality years of life.

Consider all the factors you normally would when purchasing a puppy **in addition** to his DNA status.

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- **Wouldn't it just be safest to get a homozygous negative (a "0")?**

Maybe...*and maybe not.* Sure, a "negative" is very unlikely to become affected with inherited PLN. However, it doesn't mean the dog won't experience any health issues during his lifetime...and some diseases are more prevalent than PLN. Plus you want to be sure your puppy has had a great start in life. Your best bet is to purchase a Wheaten from a knowledgeable, reputable breeder who can tell you about the health of your puppy's parents and close relatives and has done a great job raising and socializing your Wheaten.

- **What if a breeder says their dogs have never had PLN...do they still need to test the sire and dam?**

This answer is pretty easy...as one breeder has long said "If you don't test, you don't know." No one has X-ray vision that lets them know whether or not their dogs carry these variant genes. Additionally, if the breeder is a SCWTCA member, the club's Code of Ethics requires testing before breeding except in very specific circumstances.

- **What if just one parent has been tested?**

Ditto! However, if one parent is a "0", then the puppies will either be heterozygotes or negatives.

- **Why breed a homozygous positive (a "2") Wheaten, even if the mate is a negative (a "0")?**

That dog may have a number of great qualities, including overall good health and temperament and healthy relatives. It's as important to preserve those genes as it is to try to eliminate the variant genes associated with an increased risk of PLN. Eliminating all "2s" from the gene pool also carries the risk of increasing other health problems in the breed and decreasing good traits. By breeding a positive to a negative, the breeder hopes to save the "good" genetic material and have heterozygote puppies with a lower risk of developing PLN.

It's important to always remember the best puppy for you is one who is happy, well-socialized, well-bred **and** healthy. A healthy puppy with a poor temperament or a puppy from a disreputable source can result in a lot of heartache for you and your family. Always look at the full picture when you select your new Wheaten companion.

While it is important to all of us, breeders and owners alike, to reduce the incidence of PLN, we also want Soft Coated Wheaten Terriers to remain the overall healthy, long-lived breed it has always been. The breeders of the SCWTCA are dedicated to the welfare of the breed and welcome your interest!

You can read more about the DNA variant gene test on the Soft Coated
Wheaten Terrier Club of America website at
<http://www.scwtca.org/health/dnatest.htm>.

You can also listen to a presentation by the lead researcher,
Dr. Meryl P. Littman. She does a great job making technical information
understandable to the rest of us!

For more information on Wheaten health,
visit www.scwtca.org or send questions to health@scwtca.org