Urate Stones and Low Purine Diets for Dogs
The Raw Solution

Many enzymes are involved in the absorption of nutrients in the canine digestive system, however some dogs lack the necessary enzymes required to break down purine, which is essential for proper nutrition. When not broken down properly, purines are converted to uric acid. Excessively high levels of uric acid can lead to the formation of kidney stones in the urethra or bladder. Dogs predisposed genetically to urate kidney stones include Dalmatians, Black Russian Terriers, English Bulldogs, Miniature Schnauzers, and Shih Tzus. Though stones can form in any dog of any age, the most common age is 1 to 4 years.

Why Big Country Raw Diets?

By feeding a biologically appropriate diet, you can prevent the formation of urate stones and provide your dog with a diet that will help them thrive!

If you have a dog that is pre-disposed to urate stones, or who has had urate stones in the past, it is especially important that their diet be formulated correctly to prevent another occurrence. It is often recommended to feed vegetarian or vegan diets, however, these diets can also lead to nutritional deficiencies of essential nutrients such as taurine, magnesium, selenium, and vitamins E & B. Long term deficiencies of essential minerals can lead to further health complications for your dog.

Veterinarian prescribed dry food diets are also not recommended because these formulas rely on very low quality meat by-products with extremely low protein levels (Hills Prescription U/D is 8%, and Royal Canin Urinary SO is only 12%). Many prescription diets also include chemical preservatives, high purine yeast, added salt, and potential allergen causing fillers such as corn and soy fiber. Long-term feeding of these diets will eventually result in further health complications.

Feeding a Low Purine Raw Diet

It is recommended that dogs genetically prone to urate stones be fed a low-purine diet. Foods that contain low purines include most fruit and vegetables, dairy products, and grains. Although these food choices can be included in the raw food diet, they do not contain the nutrients necessary to provide a complete and balanced diet for your dog or cat. Dogs and cats require meat protein, as this is the most digestible and biologically appropriate food choice. By choosing lower purine meat proteins and supplementing with additional fruits, vegetables, and dairy products we can create a raw feeding plan that provides your dog with proper nutrition, yet lowers the build-up of uric acid.

Here is a list of proteins and their purine levels available through Big Country Raw:

Per 100 grams

Chicken – 98 mg	Rabbit – 60 mg	Mackerel – 60 mg
Turkey – 50 mg	Beef – 58 mg	Salmon – 68 mg
Duck – 64 mg	Pork – 116 mg	Lamb – 76 mg

*Game Meats including Bison, Venison, Elk, Wild Boar, Buffalo and Kangaroo are high in purines and therefore not recommended.

Primary Protein Choices
Big Country Raw proteins containing the least % of purines, making them the best choices to formulate a raw food diet are **Turkey, Rabbit, and Duck**.

Secondary Proteins – Feed in Moderation
Beef, Lamb, and Chicken could also be fed, but contain at least 10% organ meats, which makes these choices higher in purine. We would suggest choosing raw meaty bones such as lamb necks, and meaty beef bones versus our ground meal choices in these proteins. You can also offer raw meaty bones in addition to these meal choices to reduce the % of organ meats from 10% to 5%.

Proteins Not Recommended
We suggest avoiding all Pork, Wild Boar, Venison, Elk, Kangaroo, and Buffalo because these proteins contain the highest levels of purine.

What about Organ Meats, Tripe, Fish, Fruit, Vegetables and Dairy?

Organ Meats typically contain on average 100 mg and up to 230 mg of purine (beef liver) so organ meats should be avoided as much as possible. Big Country Raw diets contain on average 10% organ meats. Ideally, we would like to reduce the % of organ meats to not exceed 5% of the entire diet. The best way to reduce the % of organ meats in the diet is to add raw meaty bones such as turkey or duck necks with the raw meals. For example, 1 lb of Duck Dinner or Pure Duck will contain 10% organ meat, but if you add 1 lb of raw duck necks to this ratio you would reduce the % of organ meats from 10% to 5%.

Tripe contains a moderate amount of purine, and therefore can be fed in moderation. We suggest not exceeding 10% – 20% of the diet. Most dogs do well with tripe as a replacement to organ meats because it is a rich source of enzymes and minerals.

Fish such as herring or sardines are very high in purines, however salmon is moderately high. We would recommend adding Pure Salmon or Turkey Salmon Lamb Blend in moderation. Fish Dinner is not recommended to be included in the low purine raw diet. Herring and salmon oil contains high amounts of purine (75 mg), so it is recommended that you supplement with coconut oil as a source of Omega-3 fatty acids.

Fruits and Vegetables are exceptionally low in purines. On average, most fruit and vegetables contain less than 20 mg purine per 100g. We would suggest increasing the % of fruit and vegetables in your dog's diet from 10% to 20%. Recommendations are to add 1 tbsp of Big Country Raw Fruit and Vegetable Blend per ¼ lb of raw. Pumpkin is also very low in purine. Adding THRIVE pumpkin powder or purée to your dog's meals is an excellent way to lower purines.

Dairy products are also very low in purines with values less than 5%. A good way to increase caloric intake is to add yogurt, goat's milk, or cottage or ricotta cheese to your dog's raw meals. We suggest dairy not exceed more than 10% – 15 % of your dog's diet because dairy is not always easily digested by dogs, and too much dairy can cause diarrhea.

Low Purine Meal Planning Information

Making modifications with the Big Country Raw Menu is the best recommended option for creating a diet that is low in purines while providing a balanced diet for your dog.

Example Recipe for 1 lb meal:

¾ lb meat - e.g. Turkey Dinner or ¾ lb of duck necks
+ 2 tbsp Fruit and Vegetable Blend or SuperFood Blend
+ 1 tbsp THRIVE Pumpkin Powder or 3 tbsp pumpkin or sweet potato puree
+ 2 tbsp Cottage Cheese, Yogurt, Kefir or Ricotta Cheese
+ 1 tsp Coconut Oil

Tips for Success

Water Consumption
Urinary Stones form more easily in concentrated acidic urine. It is recommended that you dilute the urine as much as possible by encouraging your dog to drink plenty of water every day. Adding ½ cup of extra water to your raw food meals will also help to ensure more hydration. Raw diets are naturally 65 – 70% moist so this will be the major factor in ensuring proper hydration. However, it is recommended to allow access to water throughout the house and back yard to encourage regular drinking.

In addition to dietary changes, including a raw diet and access to fresh drinking water, it is also recommended that your dog have regular and frequent opportunities to eliminate.

Testing for Urate Stones
When your dog starts to show signs of kidney stones, it is recommended that you first identify your dog's urine pH. Checking your dog's pH is easiest with a pH pool strip. Normal urinary pH levels are between 6.0 – 8.0 with 6.0 – 6.5 being the most normal range. If your dog's urine pH levels are higher than 8, this normally indicates a high amount of uric acid in your dog's system, which can lead to the formation of urate stones. We suggest collecting urine in a paper cup for testing as this also helps to check the urine for tiny stones or gritty gravel. Testing is best done in the morning before feeding. A sudden jump in pH and blood or pus in the urine can

indicate the possibility of a bacterial infection, so a visit to your vet for a urine analysis or x-ray is recommended.

We recommend testing your dog's urine pH prior to starting on the raw diet, and then monitoring regularly, especially when making dietary changes. Continual monitoring is recommended for the lifetime of your dog.