



CHRONIC RENAL FAILURE DIET – Dogs

GOALS:

- *Feed moderate to high amounts of fat
- *Moderate amounts of **HIGH QUALITY** Protein
- *Low Phosphorus
- *Low Phosphorus carbohydrates to fill in
- *Lots of clean, fresh filtered or low mineral bottled water, juices, and broth + other liquids.

CALORIES:

- ~1/3 Fat – Start with small amounts and gradually increase, watching for digestive upset + decreasing amount if diarrhea occurs. (Careful with pancreatitis)
- ~1/3 Protein – High quality protein is key, daily protein requirement increases for dogs in CRF. As long as phosphorus is kept low you shouldn't worry about feeding too much protein.
- ~1/3 Carbs – While dogs don't have a nutritional need for carbs, you may need to feed up to 50% carbs to keep phosphorus low.

HOME MADE DIET:

FAT:

Adds calories and energy, easy to digest for most dogs. Fatty meats, butter, whole-milk yogurt, egg yolks, coconut oil, fish (body) oil – are all good sources of saturated fat.

MEATS: Use highest fat ground hamburger available, lamb is very high in fat, so is pork, dark meat chicken + turkey have more fat than white meat but poultry is still a low-fat meat so leaving skin on is preferable. Beef has less phosphorus than chicken, lamb and turkey are in between.

EGGS: Yolks are high in fat but also high in phosphorus so feed in moderation.

DAIRY: Whole-milk yogurt (try goat's milk yogurt for flavor if dog doesn't like regular whole-milk yogurt), cottage cheese, ricotta, etc. Use kinds with the most fat when fed but feed in moderation because they are high in phosphorus.

OILS: Coconut oil, fish (body) oil like Salmon oil or EPA oil. Do NOT use cod liver oil (too high in vitamin D, tough for failing kidneys to process), or polyunsaturated vegetable oils (are high in omega-6 fatty acids = inflammatory, which is harmful for dogs with kidney disease + not a good source of nutrition), like Canola, corn, soy, safflower, sunflower or flaxseed(omega-3 and omega-6). Olive oil should be okay in small amounts, however, because it is mostly Omega-9, which hasn't been shown to affect kidney function.

*Fat can also be added in using bacon fat (no or low sodium), Chicken fat, or butter (unsalted if dog has high blood pressure).

PROTEIN-

Feed high quality, low phosphorus sources of protein.

*Eggs - Highest quality but yolks are rich in phosphorus so may feed 2-3 egg

whites for every yolk you feed. Cooking egg whites should increase their bio-availability even though raw food is generally better for dogs.

*Meat – raw or lightly cooked meat is a source of high quality protein.

Rec.- Green Tripe- the raw, unprocessed stomachs of ruminants. It contains high quality, easily digestible protein, beneficial bacteria, abundant enzymes and is relatively low in phosphorus as well as very palatable to dogs.

(Not the bleached white tripe for human consumption seen in grocery stores, green tripe can be ordered from frozen raw food diet suppliers online or canned from Solid Gold).

LOW PHOSPHORUS-

The further advanced the kidney disease, the less phosphorus you should feed. Give no more than ~10mg/lb body weight for dog with advanced kidney failure.

10 lb dog:	68-182 mg (up to 272 mg in very early stages)
25 lb dog:	170-455 mg (up to 682 mg in very early stages)
50 lb dog:	340-900 mg (up to 1364 mg in very early stages)
75 lb dog:	511-1364 mg (up to 2045 in very early stages)
100 lb dog:	680-1818 mg (up to 2727 in very early stages)

Foods highest in phosphorus include bones, dairy products, fish (with bones), organ meats, and egg yolks. Bones are very high in phosphorus and should be eliminated from diet or fed in very low amounts. Never add bone meal to CRF diet but instead use a calcium source like ground eggshells or calcium carbonate (calcium binds phosphorus).

- ½ teaspoon ground eggshell or about 1gram calcium per lb of food to all meals.
- Note the amount of phosphorus in grains and vegetables you feed.

OK IN LARGE AMOUNTS:

- Egg Whites, yams or sweet potatoes, white potatoes, cereals like cream of wheat, cream of rice, malt-o-meal, glutinous rice (sticky), white rice, barley, white bread.
- Grains should be cooked and boiling veggies may reduce their phosphorus levels.

OK IN MODERATE AMOUNTS:

- Higher fat meats (see meats), 20% fat ground beef, pork, lamb + liverwurst, green tripe.
- Winter squash (acorn or butternut), whole grains like brown rice, millet + whole wheat bread.
- OK in small amounts only:
- Low-fat meats (have more phosphorus), turkey, lean beef or

skinless chicken breast, organ meats (beef heart, chicken liver, beef liver/kidney), canned fish (jack mackerel, pink salmon or sardines in tomato sauce or water, not oil).

High phosphorus grains like oatmeal; dairy products-cottage cheese, whole-milk yogurt, whole-milk mozzarella, cheddar cheese or whole eggs + yolks. *Raw meaty bones should be limited if at all (including chicken parts + turkey necks) Again, you may need to feed up to 50% carbs to keep phosphorus low, Farina grains and veggies are good choices, the veggies should be cooked or pureed to be easily digestible by dogs.

CARBS-

Adds calories, can keep phosphorus levels low.

*Veggies- Cooking leaches out phosphorus, potassium and magnesium so don't give water the vegetables were cooked in. Boiling does also destroy vitamins, but steaming or boiling removes more phosphorus than baking.

Note* Celery (high sodium), parsley + dandelion greens are diuretics, and these may not be good choices for kidney failure patients.

Note* Arthritic dogs should avoid white potatoes, tomatoes, eggplant and peppers

Note* Cabbage is good for ulcers, common in kidney disease.

Some veggie ideas with phosphorus amounts in parentheses:

Asparagus(56), beets(40), broccoli(66), Carrots(44), Cauliflower(44), celery(25), collard greens(10), dandelion greens(66), endive(28), green beans(19-38), green peppers(19), jerusalem artichoke/sunchoke(78), kale(56), parsley(58), parsnip(71), peas(77-117), pumpkin(44), red cabbage(42), romaine lettuce(45), acorn squash(14), butternut squash(27), crookneck squash(32), spaghetti squash(14), tomato(24), watercress(60), zucchini(32).

*Fruits- Do not need to be cooked or pureed, are digestible as is, but note that too much fruit may lead to loose stools.

- Colored fruits like papaya + mango are good for dogs with arthritis.
- Bananas + pumpkin are high in potassium.
- Avoid grapes + raisins which have been linked to kidney failure in some dogs.

*Grains- If you do feed grains stick to those low in phosphorus. White rice is lower in phosphorus than brown rice and cream of wheat, cream of rice, malt-o-meal and tapioca are low phosphorus alternatives.

Try adding butter, meat juices or fat to add flavor and for calories or also cooking in broth or gravy rather than water. (sodium free if dog has high blood pressure). Raw honey is good for dogs in general and the phosphorus amount is negligible.

OTHER**RESTRICTIONS:**

Individual - *If dog has high potassium levels (as seen with advanced kidney disease), try to limit it in their diet, this includes foods like:

- Bananas, pumpkin, potatoes, pears, sardines, kiwi, beets, yogurt, winter squash, carrots, celery and broccoli are all high in potassium.
- If potassium levels are low (more common), you will need to supplement diet with potassium salts.
- If dog has high blood pressure limit the amount of sodium in their diet.
- Also, dogs with kidney disease can lose interest in food, look for foods and flavors to revitalize appetite. Try foods at different temperatures and in different combinations - it's important that they eat something even if it's not a recommended food.
- Offer multiple small meals rather than few larger ones.

SUPPLEMENTS RECOMMENDED:

*Salmon oil- up to 1 gram / 10lbs of body weight daily

*Coenzyme Q10- 15mg/ 10lbs body weight 3x daily

*Vitamin E- 50 IU daily/ 25 lbs. Of body weight.

*Vitamin B-complex

*Moderate amounts of vitamin C- 500mg for 50lb. Dog

(Don't use multivitamin/mineral products with phosphorus or vitamin D).

REFERENCES

Whole Dog Journal, May 2005, volume 8, #5

DogAware.com, - Kidney Disease - diets + supplements