

# SOY PROTEIN ISOLATE VERSUS MEAT BASED LOW PROTEIN DIET FOR DOGS WITH CONGENITAL PORTOSYSTEMIC SHUNTS (CPSS)

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## INTRODUCTION

Not all dogs diagnosed with a portosystemic shunt are surgery candidates and surgery will not correct all cases. In those patients lifelong low protein diet and (if necessary) lactulose are the only option. Earlier studies have shown that protein source might have an important influence on clinical signs of PSS and that diets based on vegetable and dairy protein sources lead to better results (symptoms & survival) than those based on meat proteins.

## AIM OF THE STUDY

To determine whether a low protein diet with soy as its main protein source (test diet) results in better scores for clinical performance, biochemical liver function, and hepatic encephalopathy (HE) than a similar diet but with poultry as its main protein source (control diet) in dogs diagnosed with a CPSS.

## MATERIALS AND METHODS

In a double-blind cross-over study, 16 dogs received each diet for 4 weeks. Dogs in group A started with the test diet while dogs in group B started with the control diet. Different parameters (body weight, body condition score, HE score, fecal score, complete blood count, serum biochemistry, NH<sub>3</sub>, coagulation tests) were measured at the start of the study, and following completion of the first and the second diet.



Test diet = Veterinary Diet Canine Hepatic

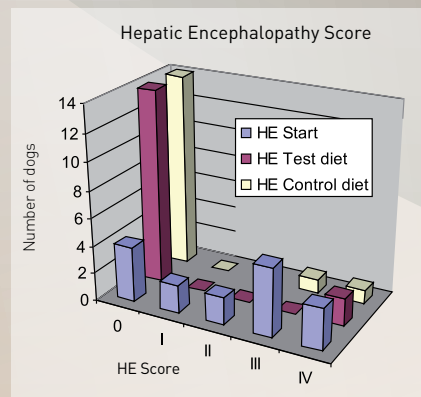
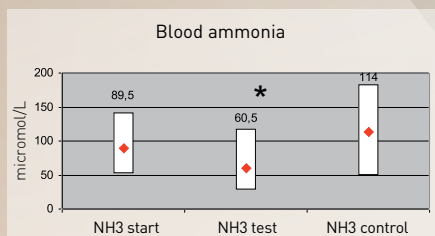
Appréciation de la condition corporelle des chiens  
Body condition scoring in dogs

Motivation / Scoring	Caractéristiques / Characteristics
1 - 1/2 (Very emaciated)	<ul style="list-style-type: none"> <li>• Cotes vertébrales saillantes, os de bassin facilement visibles (peu couverts)</li> <li>• Perte évidente de masse musculaire</li> <li>• Pas de graisse palpable sur le croupe thoracique</li> </ul>
2 - 1/2 (Emaciated)	<ul style="list-style-type: none"> <li>• Cotes, omoplates des vertébrales, os de bassin visibles</li> <li>• Cotes abdominales faiblement saillantes</li> <li>• Pas de graisse palpable sur le croupe thoracique</li> </ul>
3 (Ideal)	<ul style="list-style-type: none"> <li>• Cotes, omoplates, vertébrales, os de bassin non visibles mais facilement palpables</li> <li>• Cotes abdominales faiblement saillantes</li> <li>• Mince couche de tissu adipeux palpable sur le croupe thoracique</li> </ul>
4 (Overweight)	<ul style="list-style-type: none"> <li>• Cotes, omoplates, vertébrales, os de bassin palpables avec difficulté</li> <li>• Cotes abdominales faiblement saillantes</li> </ul>
5 - 1/2 (Very obese)	<ul style="list-style-type: none"> <li>• Dépôts adipeux indistincts sur le croupe vertébrale et à la base de la queue</li> </ul>
6 (Obese)	<ul style="list-style-type: none"> <li>• Dépôts adipeux marqués sur le thorax, le croupe vertébrale et à la base de la queue</li> <li>• Obésité abdominale évidente</li> </ul>

% as fed	Test	Control
Moisture	6,8	8
Protein	17,2	16,7
Fat	15,4	17,3
Total Dietary fiber	8,4	7,9
Minerals	4,6	4,5
<b>Calculated</b>		
NFE	47,6	45,6
ME (Kcal/kg as fed)	3978	4049

## RESULTS

- No carry-over effect
- NH<sub>3</sub>: Significantly lower on the test diet (P=0.046)
- Hepatic encephalopathy scores improved on both diets
- Shorter PT times on the test diet (P=0.072)
- Higher fibrinogen concentration on the test diet (P=0.054)



Score: 0 no clinical signs IV Severe clinical signs

## CONCLUSIONS

Both diets achieved a significant improvement in HE score. The soy-based diet (Test diet) did result in lower plasma NH<sub>3</sub> and better coagulation parameters than the control diet.