

How a Fresh Food Diet Impacts Skin Microbiome

Freshpet sponsored this first-of-its-kind study that examined how eating fresh food could increase skin microbiome diversity in dogs.

Hypothesis:

A dog's skin helps protect them against environmental factors. The skin's bacteria microbiome can change depending on what the dog eats. This study explored whether dogs fed a fresh pet food diet for 30 days experienced changes in skin bacterial composition that were different from when they were fed dry dog food for 30 days. This study shed some light on how various pet foods impact the skin microbiome and whether supporting the skin through nutrition could improve the skin's defense systems.

Objective:

To compare the effects of dry kibble versus fresh, less-processed diets on the skin microbiome composition and diversity in healthy dogs.



Conclusion

Alpha diversity on the skin was higher when dogs were fed the fresh diet compared to the dry food. Feeding fresh food to dogs increased the proportion of *Staphylococcus* and decreased *Porphyromonas* and *Corynebacterium* on the skin. Changing from a fresh diet to dry foods showed a relative decrease in skin microbiome variety and diversity in healthy dogs.

What we evaluated:



- 8 Dogs
- Freshpet Select Sensitive Stomach and Skin roll
- Commercial kibble diets
- Skin swab samples after each 30-day phase

The experiment:

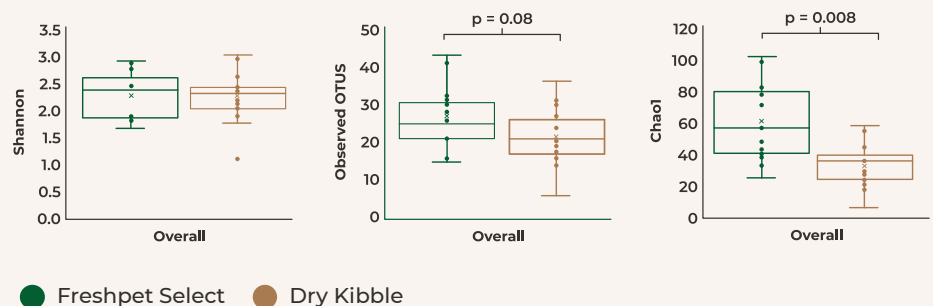
Eight dogs were fed the Freshpet Select Sensitive Stomach and Skin roll for 30 days by their owners followed by their regular dry dog food for the next 30 days. A 4-day transition period was implemented to switch diets.

To measure changes in skin bacterial populations, skin swab samples were collected from the internal ear, interdigital area of the front paw, and the groin area on each dog following the 30-day feeding of fresh diets and dry diets.

Bacterial DNA was extracted and analyzed by a third-party lab to identify changes in skin microbiome diversity and quantity on the skin. Microbiome alpha diversity analyses were measured to assess how much the skin diversity changed and how many bacterial varieties were present.

Findings:

Eating a fresh food diet resulted in dogs having increased bacterial population and diversity over eating kibble. This suggests that new nutritional strategies can be useful to help establish healthier skin microbiota in dogs, reinforcing the skin's natural defense system through diet.



Skin microbiome alpha diversity of pet dogs fed fresh (FPS) versus dry (DRY) food. Chao1 indices of alpha diversity at genus level in dogs fed FPS for 30 consecutive days, followed by DRY for an additional 30 consecutive days. Values were computed using the `core_diversity_analyses.py` script in Quantitative Insights into Microbial Ecology. Group differences were assessed by non-parametric permutational analysis of variance with protocol and time as fixed effects, under a reduced model, 9999 permutations, and type III sum of squares.

Source: Fresh Food Consumption Increases Microbiome Diversity and Promotes Changes in Bacteria Composition on the Skin of Pet Dogs Compared to Dry Foods. *Animals*. 2022; 12(15):1881.