# The Impact of Food Desert Residence on Hidradenitis Suppurativa: Results from a Single Center Cohort Study

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# The Impact of Food Desert Residence on Hidradenitis Suppurativa: Results from a Single Center Cohort Study

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## *Abstract*

Hidradenitis suppurativa (HS) is a chronic and debilitating skin condition associated with several comorbidities, including diabetes mellitus, cardiovascular disease, and smoking. Despite these known associations, the relationship between HS and environmental factors remains poorly understood. Food deserts (FD), defined as limited access to nutritious food in low-income communities, is a possible contributing factor. In this study, we evaluated the impact of living in food deserts (FD) on the prevalence of patients with HS seen in our wound clinic. We conducted a retrospective review of patients diagnosed with HS who were seen at our institutional wound clinic from 2014 to 2024. Zip codes of patients were collected, and their residence in a FD was determined using the U.S. Department of Agriculture Adult Food Security Survey criteria. Demographic data, including socioeconomic variables, patient comorbidities, HS characteristics, and Hurley Stages were also collected. Among 191 patients with HS, the median age was 40 years old, with a median body mass index of 31.1 kg/m2, and 72.3% were female. Overall, 36.6% (n=70) of the patients resided in a FD. A significant difference in race (p=0.01) was observed between patients living in a FD and those who did not. Patients in a FD had significantly lower median household incomes ($71,964 vs. $101,434, p<0.001), and received fewer immunologic treatments for HS (14.3% vs. 27.3%, p=0.038). Other demographic variables including obesity class, diabetes, smoking, or insurance type were not significant between the two cohorts. Overall, 51.8% of patients experienced HS in multiple locations, which did not differ between FD and non-FD cohorts. There were no significant differences in Hurley Stages between the two groups (p=0.583). In our study, the residence of patients with HS living in food deserts was significantly associated with race and median income, but did not have any significant differences in HS outcomes. While food deserts may be a valuable indicator of socioeconomic status for patients with HS, our study did not find a significant impact of FD on the pathophysiology of HS.

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Hidradenitis suppurativa (HS) is a chronic and debilitating skin condition associated with several

medical comorbidities, including obesity, diabetes mellitus, cardiovascular disease, and cigarette smoking.[1] Despite these known associations, the relationship between HS and environmental factors remains poorly understood. Food deserts (FD), defined as limited access to nutritious food in low-income communities, are a possible contributing factor. Given that living in a food desert is a major contributor to poor diet, inflammation, and obesity, we hypothesized that HS patients living in these regions would present with a higher burden of dermatological disease.[2] In this study, we evaluate the impact of living in a food desert on the prevalence and severity of patients with HS seen at our institution's wound clinic.

We conducted a retrospective chart review of patients diagnosed with HS who were seen at our institutional wound clinic from 2014 to 2024. Zip codes of patients were collected, and their residence in a FD was determined using the U.S. Department of Agriculture Adult Economic Research Service. We defined food deserts as addresses that could be geo-coded to low-income neighborhoods with low access (farther than one-half mile) to a grocery store.[3] Demographic data, including socioeconomic variables, patient comorbidities, HS characteristics, and Hurley Stage were collected for analysis.

Among 191 patients with HS, the median age was 40-years-old, with a median body mass index of 31.1 kg/m$^2$, and 72.3% were female. Overall, 36.6% (n=70) of these patients resided in areas classified as food deserts. Patients living in a food desert were predominantly Black (p=0.01) compared with those who were not living in a FD. In addition, patients living in FD areas had significantly lower median household incomes ($71,964 vs. $101,434, p<0.001), and were less likely to be on a biologic agent for the treatment of their HS (14.3% vs. 27.3%, p=0.038). Other demographic variables including obesity class, diabetes, smoking, and insurance status were not significant between the two cohorts. Overall, 51.8% of patients had multifocal HS disease, which did not differ significantly between FD and non-FD cohorts. There were no significant differences in Hurley Stages between the two groups (p=0.583).

Consistent with existing literature, our study revealed significant associations between food desert residency, race, and income.[4-5] However, we did not observe a significant correlation between FD residence and extent of HS disease burden and Hurley Stage classification. While food deserts may serve as valuable indicators of socioeconomic status in patients, our study suggests a more nuanced relationship with HS

pathophysiology and disease progression.

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