

# Chronic Inflammatory Skin Conditions: Diagnosis in the Eyes of the Beholder?

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## Objectives:

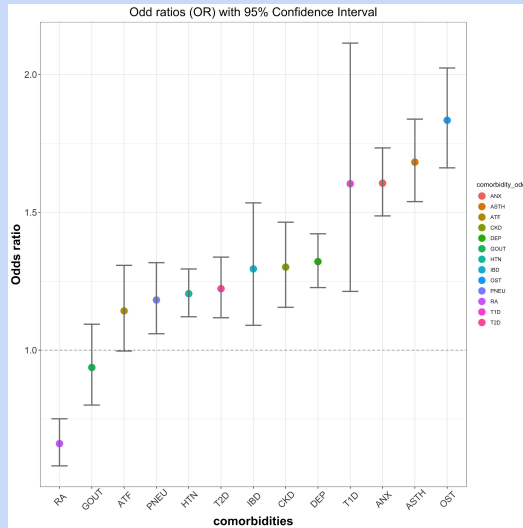
To elucidate the differences in diagnosis of common chronic inflammatory skin (CIS) conditions (*atopic dermatitis, psoriasis, alopecia areata, acne, vitiligo*) among different ethnic groups and between dermatologic specialists and primary care providers.

## Methods:

- Data Retrieval:** Utilized the DataDirect to obtain patient demographics, clinic sites of patient encounter, ICD9/10 codes issued for each encounter, and other clinical variables/comorbidities.
- Data Analysis:** The primary response variable was whether the patients with CIS conditions have comorbid diagnosis or not. Thus, the binary response variable is assumed to have only two values (one or zero).

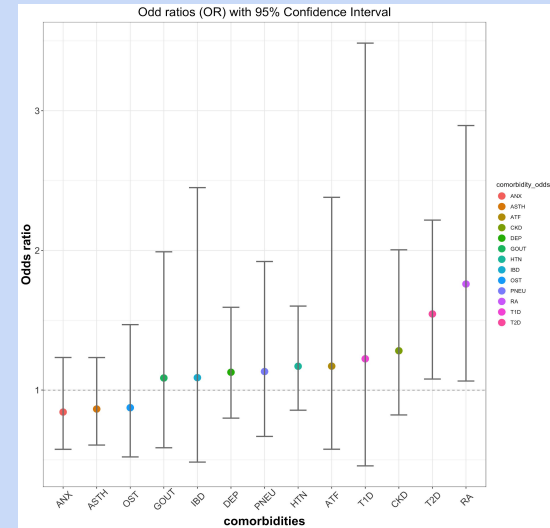
**Hypothesis:** There are discrepancies in CIS condition diagnosis among different ethnic groups in the specialized (i.e. dermatology) versus non-specialized (i.e. primary physician clinic) visits.

SKIN DISEASES	ICD 9/10 CODES	TOTAL PATIENTS	GENDER		AGE OF DIAGNOSES		ETHNICITY & CLINIC			
			Male	Female	Mean	SD	Dermatology		Non-dermatology	
							African American	Caucasian	African American	Caucasian
PSORIASIS		8167	3748	4419	53.02	16.37	140	2524	196	5307
ACNE		17057	4552	12505	32.32	14.01	802	6032	1030	9193
ALOPECIA		799	518	281	43.22	15.93	93	419	62	225
ATOPIC DERMATITIS		3357	1304	2053	43.69	18.89	157	479	475	2246
VITILIGO		992	444	548	51.14	17.23	52	373	92	475



## Figure 1. Clinic-Specific Effect (*Psoriasis*):

Patients diagnosed with psoriasis in dermatology clinics are less likely to have rheumatoid arthritis, but more likely to have pneumonia, hypertension, Type 2 diabetes, type 1 diabetes, inflammatory bowel disease, chronic kidney disease, depression, anxiety, asthma, and osteoporosis.



## Figure 2. Ethnicity & Clinic Interaction Effect (*Psoriasis*):

The interaction effects between clinic and ethnicity is not significant in most of the common comorbidities except for Type 2 diabetes and rheumatoid arthritis.

**Impact Statement:** The downstream effects of this project will be to improve culturally-sensitive patient care, add to the existing literature regarding autoimmune comorbidities, and guide medical education. Because this study seeks to assess how diagnoses of CIS conditions vary based on the clinic setting and how they vary for different races, the data will be used to provide important guidance for improving education of non-dermatologic specialists for diagnosis of CIS, especially in skin of color. Furthermore, it will form the basis of future research utilizing the electronic health record system to determine quality of care for patients with chronic skin conditions, which includes rate of referral to a dermatology office when a CIS diagnosis is made in a primary care setting.