Dermatology\_questionaire:

* [DED011 - # moles at least 1/4 inch in diameter](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DED011)
* [DEQ034D - Use sunscreen?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DEQ034D)
* [DEQ038G - In the past yr did you have sunburn?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DEQ038G)
* [DED038Q - # of times in past yr you had a sunburn](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DED038Q)
* [DEQ053 - Ever told had Psoriasis?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DEQ053)
* [DEQ055 - How much of a problem has psoriasis been](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DEQ055)
* [DEQ057 - Is Psoriasis little or extensive?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEQ_C.htm#DEQ057)

Dermatology\_exam:

* [DED1PSDX - Reader 1 psoriasis](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEX_C.htm#DED1PSDX)
* [DED2PSDX - Reader 2 psoriasis](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEX_C.htm#DED2PSDX)
* [DED6PSDX - Reader 6 psoriasis](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEX_C.htm#DED6PSDX)
* include small parts (specific body parts)

Alcohol:

* [ALQ101 - Had at least 12 alcohol drinks/1 yr?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ101)
* [ALQ120Q - How often drink alcohol over past 12 mos](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ120Q)
* [ALQ130 - Avg # alcoholic drinks/day -past 12 mos](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ130)
* [ALQ140Q - #days have 5 or more drinks/past 12 mos](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ140Q)
* [ALQ140U - # days per week, month, year?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ140U)
* [ALQ150 - Ever have 5 or more drinks every day?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/ALQ_C.htm#ALQ150)

Body\_measure:

* [BMXBMI - Body Mass Index (kg/m\*\*2)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/BMX_C.htm#BMXBMI)
* [BMXWAIST - Waist Circumference (cm)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/BMX_C.htm#BMXWAIST)
* [BMXHT - Standing Height (cm)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/BMX_C.htm#BMXHT)
* [BMXTHICR - Thigh Circumference (cm)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/BMX_C.htm#BMXTHICR)

Demo\_info:

* [RIAGENDR - Gender](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#RIAGENDR)
* [RIDAGEEX - Exam Age in Months - Recode](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#RIDAGEEX)
* [RIDRETH1 - Race/Ethnicity - Recode](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#RIDRETH1)
* [RIDAGEMN - Age in Months - Recode](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#RIDAGEMN)
* [DMDMARTL - Marital Status](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#DMDMARTL)
* [INDFMINC - Annual Family Income](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#INDFMINC)[INDHHINC - Annual Household Income](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#INDHHINC)
* [INDFMPIR - Family PIR](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DEMO_C.htm#INDFMPIR)

Vitimin\_ace:

* All data

Vitimin\_d:

* [LBDVIDMS - Vitamin D (nmol/L)](https://wwwn.cdc.gov/nchs/nhanes/2003-2004/VID_C.htm#LBDVIDMS)

Smoking(combined – Note: largely missing):

* [**SMQ620** - Ever tried cigarette smoking](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/SMQMEC_C.htm#SMQ620)
* [SMQ077 - How soon after waking do you smoke](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/SMQMEC_C.htm#SMQ077)
* [**SMQ710** - # days smoked cigarettes last 5 days](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/SMQMEC_C.htm#SMQ710) # all nan
* [SMQ720 - # cigarettes smoked per day](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/SMQMEC_C.htm#SMQ720)
* [SMQ020 - Smoked at least 100 cigarettes in life](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/SMQ_C.htm#SMQ020)

Immunization:

* [IMD010 - Received hepatitis A vaccine](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/IMQ_C.htm#IMD010)
* [IMQ020 - Received hepatitis B 3 dose series](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/IMQ_C.htm#IMQ020)
* [IMQ030- Had pneumonia vaccination](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/IMQ_C.htm#IMQ030)

Supplement\_count and use\_of\_supplement:

* [DSD010 - Any Dietary Supplements taken?](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ1_C.htm#DSD010)
* [DSDCOUNT - Total # of Dietary Supplements taken](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ1_C.htm#DSDCOUNT)
* [DSDSUPID - Supplement ID number](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ2_C.htm#DSDSUPID)
* [DSDSUPP - Supplement name](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ2_C.htm#DSDSUPP)
* [DSD103 - Days supplement taken, past 30 days](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ2_C.htm#DSD103)
* [DSD122Q - Quantity of supplement taken daily](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/DSQ2_C.htm#DSD122Q)

CRP:

* [LBXCRP - C-reactive protein(mg/dL)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/L11_C.htm#LBXCRP)

Physical activity:

* [PADLEVEL - Activity level](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/PAQIAF_C.htm#PADLEVEL)
* [PADTIMES - # of times did activity in past 30 days](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/PAQIAF_C.htm#PADTIMES)
* [PADDURAT - Average duration of activity (minutes)](https://wwwn.cdc.gov/Nchs/Nhanes/2003-2004/PAQIAF_C.htm#PADDURAT)

Ideas learned from reference papers:

Target variable:

1. psoriasis / no psoriasis (binary classification)
2. self- reported body surface affected (BSA) (regression or multiclassificatioin)
3. PASI score: psoriasis area and severity index (if possible)

Feature variables:

1. Demographics
2. Age
3. Gender
4. Race
5. BMI

2. Self reported

1. Smoking status
2. Alcohol consumption
3. Physical activity

3. Dietary

1) Vitamin D intake

1. Oral vitamin D supplementation
2. Calcium intake

4. Comorbidities

1. Immune disease
2. Inflammation disease
3. MetS: Metabolic disease
4. Cardiovascular
5. Obesity
6. Diabetes (Type II)
7. Cardio-metabolic disease
8. Other psoriasis related comorbidities? (need domain knowledge input)

5. Examination info

1. CRP level: C-reative protein
2. Blood 25[OH]D: 25 hydroxyvitamin D
3. 1alpha OHD
4. alfa-calcidol

25-hydroxyvitamin D;

*BMI,* body mass index;

*CRP,* C -reactive protein; *IL,* interleukin;

*MetS,* metabolic disease;

*PASI,* psoriasis area and severity index;

*RDAs,* recommended dietary allowances;

*TNF,* tumor necrosis factor;

*VDR,* vitamin D receptor.