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Prevalence of Dermatological Disease Among Persons 1-74 Years of Age: United States^a

This report presents national estimates of the prevalence of skin pathology, or dermatological disease, among the civilian noninstitutionalized population 1-74 years of age in the United States, based on examination findings from the Health and Nutrition Examination Survey of 1971-74.

The Health and Nutrition Examination Survey program in which these data were obtained was designed to measure the nutritional status of the U.S. population as well as certain aspects of general health status and medical care needs in the U.S. population. This is the fourth of the Health Examination Survey programs authorized by the 84th Congress under the National Health Survey Act of 1956. These programs secure information on the prevalence of medically defined illness, including previously unrecognized and undiagnosed conditions, as well as on a variety of physical, physiological, and psychological measures within the population through direct examinations, tests, and measurements, as described in previous publications.¹⁻⁴

The dermatology component of the Health and Nutrition Examination Survey (HANES) was planned at the request of and in cooperation with the Committee on Planning for the National Program for Dermatology of the National Academy of Dermatology. Dr. Marie-Louise T. Johnson, Chairman of the Data Collection Unit for the National Program, was primarily responsible for planning the content of the examination, recruiting the dermatologists, and training them

in the examination methodology so as to minimize interobserver variation. This part of the HANES examination included a complete clinical examination of the skin and surrounding tissue that considered normal variations in texture and color, certain manifestations of aging, and all pathological changes. Significant diagnoses were documented by tissue biopsy to determine malignancy or culture to identify fungi whenever possible. Estimates were made of actinic exposure experienced, as well as actinic damage sustained, and of occupational risk from irritant and allergic contractants. For an examinee with a significant hand, foot, or generalized problem, the dermatologist made a judgment about the burden to the examinee in terms of discomfort or disability, about care sought, and about the effect expected from current best care possible.

The examinations of persons in this HANES sample were made at 65 preselected locations throughout the country. Of the 28,043 sample persons selected to represent the 194 million persons 1-74 years of age in the U.S. population, there were 20,749, or 74.0 percent, examined. This corresponds to an effective response rate of 75.2 percent after adjustment is made for the effect of oversampling among the poor, preschool children, women of childbearing age (20-44 years), and the elderly.

This summary is limited to national estimates by age and sex of the prevalence of skin disorders and the principal types of skin disease. The *Code of Skin Diseases* of the Department of Dermatology, New York University (NYU) School of Medicine⁵ was used for identifying and classifying skin disorders. Further information on the geographic and socioeconomic distribution of skin pathology, the extent of dis-

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ability or handicap caused by skin conditions, and the extent to which medical care has been sought or needed among the U.S. population will be presented in a forthcoming Series 11 report in the *Vital and Health Statistics* series.⁶

TRENDS

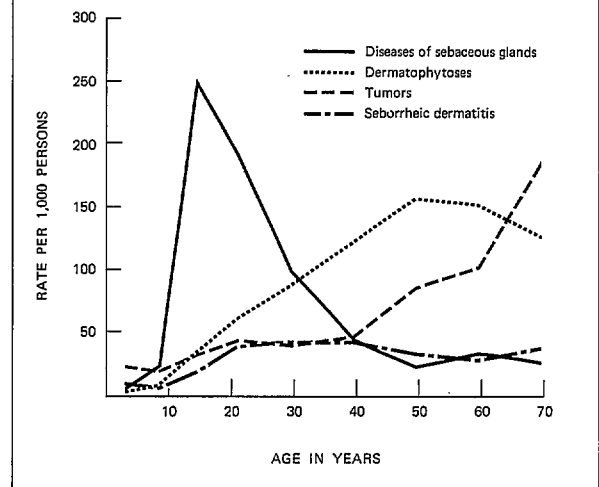
Among persons 1-74 years of age in the United States, nearly one-third (31.2 percent), or an estimated 60.6 million, have one or more significant skin conditions (table 1). These include 3.2 percent, or an estimated 6.1 million, who have three different types of skin conditions; 6.4 percent, or 12.4 million, with two; and 21.6 percent, or 42.0 million, with only one condition. Since the examiner was limited to the identification of no more than three conditions, only the three most serious were recorded. Hence the estimates obtained may somewhat underestimate the true prevalence of specific skin conditions in the population.

The pattern of increase in skin pathology with age is shown in figures 1 and 2 and table 2. The prevalence rates are lowest among children, more than double by ages 12-24 years, decrease slightly by 25-34 years, then steadily increase with age to a maximum at 65-74 years.

Figure 1. PREVALENCE RATES FOR SIGNIFICANT SKIN PATHOLOGY AND PREVALENCE RATES OF SIGNIFICANT SKIN CONDITIONS AMONG PERSONS 1-74 YEARS BY AGE: UNITED STATES, 1971-74.



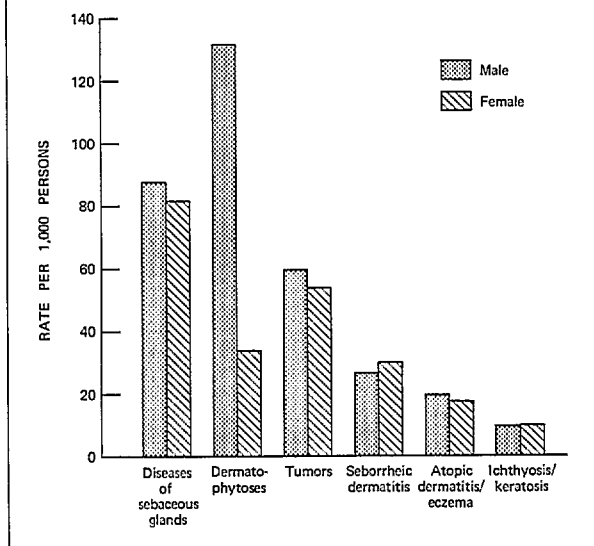
Figure 2. PREVALENCE RATES FOR THE FOUR LEADING TYPES OF SIGNIFICANT SKIN PATHOLOGY AMONG PERSONS 1-74 YEARS BY AGE: UNITED STATES, 1971-74.



The most frequently occurring groups of skin conditions are those affecting the sebaceous glands (84.8 per 1,000 persons); dermatophytoses, or fungal diseases (81.1 per 1,000); malignant or benign tumors (56.5 per 1,000); and seborrheic dermatitis (28.2 per 1,000). Among the individual conditions diagnosed, the most prevalent is acne vulgaris (68.1 per 1,000); followed by benign tumors (38.2 per 1,000); fungal conditions of the feet, tinea pedis (38.7 per 1,000); seborrheic dermatitis (28.2 per 1,000); fungal conditions of the nails, tinea unguium (21.8 per 1,000); precancerous and unspecified tumors (12.4 per 1,000); folliculitis (8.0 per 1,000); verruca vulgaris (8.5 per 1,000); and atopic dermatitis (6.9 per 1,000).

One-third of those persons with significant skin pathology (36.4 percent, or an estimated 22.0 million persons 1-74 years of age) are concerned about their skin problem, and 3.4 percent, or an estimated 2.1 million persons, have a disability severe enough to be a handicap to gainful employment or housework. The principal skin conditions of concern are those affecting the sebaceous glands (28.2 per 1,000); dermatophytoses, or fungal diseases (21.6 per 1,000); the atopic dermatitis/eczema group (10.8 per 1,000); and tumors (8.1 per 1,000) (table 3). However, among those with significant skin pathology diagnosed, persons are most

Figure 3. PREVALENCE RATES FOR THE SIX LEADING TYPES OF SKIN PATHOLOGY AMONG PERSONS 1-74 YEARS OF AGE BY SEX: UNITED STATES, 1971-74.



likely to be concerned if they have psoriasis (69 percent of those with this diagnosis), atopic dermatitis/eczema (58 percent), diseases of the sebaceous glands (33 percent), vitiligo (28 percent), and fungal conditions (dermatophytoses, 27 percent).

Skin pathology is more prevalent among males than among females (34 percent compared with 29 percent), and the proportion with the major types of skin conditions is generally greater among males than among females (figure 3). Of the most frequently occurring skin conditions, males are substantially more likely than females to have a fungal condition or folliculitis, the prevalence being about three times as great in males.

REFERENCES

¹National Center for Health Statistics: Plan and initial program of the Health Examination Survey. *Vital and Health Statistics*. PHS Pub. No. 1000-Series 1-No. 4. Public Health Service. Washington. U.S. Government Printing Office, July 1965.

²National Center for Health Statistics: Plan, operation, and response results of a program of children's examinations. *Vital and Health Statistics*. PHS Pub. No. 1000-Series 1-No. 5. Public Health Service. Washington. U.S. Government Printing Office, Oct. 1967.

³National Center for Health Statistics: Plan and operation of a Health Examination Survey of U.S. youths 12-17 years of age. *Vital and Health Statistics*. PHS Pub. No. 1000-Series 1-No. 8. Public Health Service. Washington. U.S. Government Printing Office, Sept. 1969.

⁴National Center for Health Statistics: Plan and operation of the Health and Nutrition Examination Survey, United States, 1971-73. *Vital and Health Statistics*. Series 1-Nos. 10a and 10b. DHEW Pub. Nos. (HRA) 76-1310 (10a) and (HSM) 73-1310 (10b). Health Resources Administration. Washington. U.S. Government Printing Office, Feb. 1973.

⁵The Department of Dermatology, New York University School of Medicine: *Code of Skin Diseases*, 1st rev. New York. New York University, Feb. 1968.

⁶National Center for Health Statistics: Skin conditions and need for medical care among persons 1-74 years of age, United States; 1971-74. *Vital and Health Statistics*. Series 11. Health Resources Administration, DHEW, Rockville, Md. To be published.

Table 1. Prevalence of significant skin pathology, all types and the most frequently occurring types of conditions, among persons 1-74 years, by sex: United States, 1971-74

Condition and NYU code	Both sexes	Male	Female	Both sexes	Male	Female
	Rate per 1,000 persons			Number in thousands		
Persons with one or more significant skin conditions-----	312.4	339.8	286.6	60,601	31,988	28,613
All types of significant skin conditions-----	439.7	499.4	383.4	85,287	47,018	38,269
Diseases of sebaceous glands-----7141-7149	84.8	87.9	81.9	16,465	8,279	8,186
Acne vulgaris-----714150	68.1	70.5	65.9	13,217	6,638	6,579
Cystic acne-----714180	1.9	3.3	0.6	375	312	63
Acne scars-----714190	1.7	2.0	1.3	321	192	129
Xerosis-----714930	6.5	5.3	7.7	1,260	497	763
Dermatophytoses-----131	81.1	131.4	33.7	15,733	12,372	3,361
Tinea pedis-----13100-	38.7	68.4	10.7	7,509	6,438	1,071
Tinea unguium-----1312--	21.8	30.3	13.9	4,232	2,856	1,376
Tinea versicolor-----131910	8.4	10.9	6.0	1,623	1,022	601
Tinea cruris-----13131-	6.7	12.9	0.9	1,301	1,214	87
Tumors-----19x,22x,23x,23y	56.5	59.6	53.7	10,968	5,606	5,362
Malignant-----19x	5.9	6.4	5.3	1,136	602	534
Basal cell (nodular-ulcerative-solid)-----19x14x	0.6	0.6	0.7	119	52	67
Basal cell epithelioma-----19x18x	1.3	1.6	1.0	247	147	100
Benign ¹ -----22x	38.2	35.8	40.5	7,412	3,372	4,040
Lipoma-----22x959	2.1	2.6	1.6	401	244	157
Precancerous and not specified-----23x,23y	12.4	17.4	7.9	2,420	1,632	788
Actinic keratosis-----23x081	9.6	13.9	5.5	1,858	1,306	552
Seborrheic dermatitis-----700010	28.2	26.4	29.9	5,476	2,490	2,986
Atopic dermatitis/eczema-----701,708300,708310,708320	18.4	19.5	17.4	3,575	1,837	1,738
Atopic dermatitis-----708310	6.9	8.2	5.6	1,332	771	561
Lichen simplex chronicus-----708320	4.5	4.7	4.4	882	441	441
Hand eczema-----701000	1.6	1.1	2.1	311	105	206
Nummular-----701010	1.7	1.0	2.4	332	92	240
Dyshidrotic-----701030	2.1	3.1	1.2	405	288	117
Ichthyosis/keratosis-----710130,710150	9.5	9.3	9.6	1,835	880	955
Folliculitis-----713908	8.0	12.3	4.0	1,553	1,154	399
Verruca vulgaris-----696030	8.5	10.3	7.2	1,684	967	717
Psoriasis-----706090	5.5	5.9	5.1	1,070	556	514
Seborrheic keratosis-----22x44x	5.2	4.6	5.8	1,010	431	579
Vitiligo-----716210	4.9	3.6	6.2	957	341	616
Herpes simplex-----096	4.2	4.0	4.5	824	376	448
All other skin conditions-----	124.9	124.6	124.4	24,137	11,729	12,408

¹Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

Table 2. Prevalence of significant skin pathology, all types and the most frequently occurring types of conditions, among persons 1-74 years, by age: United States, 1971-74

Condition and NYU code	1-5	6-11	12-17	18-24	25-34	35-44	45-54	55-64	65-74
	years	years	years	years	years	years	years	years	years
	Rate per 1,000 persons								
Persons with one or more significant skin conditions-----	142.3	174.2	362.0	365.1	318.0	328.2	356.8	361.9	409.5
All types of significant skin conditions-----	166.4	195.4	468.5	499.9	452.9	475.2	529.7	563.9	654.8
Diseases of sebaceous glands-----7141-7149	6.3	21.4	249.9	191.1	99.6	44.1	21.5	32.0	25.5
Acne vulgaris-----714150	0.4	11.9	231.9	172.2	83.6	25.4	8.7	2.5	0.7
Cystic acne-----714180	-	-	2.0	5.4	5.2	2.6	-	-	0.1
Acne scars-----714190	-	-	4.5	5.2	0.9	1.7	0.9	-	-
Xerosis-----714930	2.8	6.7	3.9	3.7	4.0	6.8	5.4	15.3	14.9
Dermatophytoses-----131	3.4	8.4	33.2	61.7	87.7	121.5	155.7	150.8	126.8
Tinea pedis-----13100-	0.4	4.0	14.1	24.9	49.1	62.0	80.9	57.9	59.6
Tinea unguium-----1312--	-	0.9	1.9	7.0	13.4	24.9	46.2	68.5	54.7
Tinea versicolor-----131910	1.1	1.5	10.2	17.8	9.9	13.0	7.2	7.3	2.3
Tinea cruris-----13131-	-	-	4.7	6.7	10.2	11.7	13.1	8.9	1.3
Tumors-----19x,22x,23x,23y	21.7	18.9	31.3	43.0	39.6	46.8	84.9	100.2	184.1
Malignant-----19x	-	-	0.5	0.1	0.1	3.2	9.5	18.9	36.4
Basal cell (nodular-ulcerative-solid)-----19x14x	-	-	-	-	-	0.2	1.1	2.1	3.8
Basal cell epithelioma-----19x18x	-	-	-	-	-	0.8	3.4	3.9	5.9
Benign ¹ -----22x	21.7	18.9	30.7	40.7	38.9	38.2	52.9	44.9	68.1
Lipoma-----22x959	-	0.8	-	0.9	0.6	1.6	5.3	4.4	7.7
Precancerous and not specified-----23x,23y	-	-	0.1	2.2	0.6	5.4	22.5	36.4	79.6
Actinic keratosis-----23x081	-	-	-	-	-	1.5	15.9	32.8	65.1
Seborrheic dermatitis-----700010	9.6	6.7	18.5	38.7	41.9	41.1	31.9	27.4	36.3
Atopic dermatitis/eczema-----701,708300,708310,708320	24.9	20.0	17.0	15.4	28.0	14.7	13.9	12.8	18.3
Atopic dermatitis-----708310	19.3	13.8	10.7	5.1	6.0	1.4	2.4	1.0	1.7
Lichen simplex chronicus-----708320	-	1.7	4.1	1.2	5.8	5.5	5.2	9.4	10.3
Hand eczema-----701000	-	-	0.2	0.3	4.9	3.7	1.5	1.9	0.9
Nummular-----701010	1.9	1.3	0.6	4.9	2.5	0.1	0.7	0.6	3.2
Dyshidrotic-----701030	-	1.9	0.4	2.6	5.9	1.3	4.0	-	0.4
Ichthyosis/keratosis-----710130,710150	8.6	15.5	16.7	8.8	11.5	7.7	2.7	7.0	1.5
Folliculitis-----713908	1.2	3.2	5.3	18.9	15.4	12.8	5.5	2.1	1.1
Verruca vulgaris-----696030	4.7	13.1	15.5	12.4	6.3	6.2	8.9	2.4	3.6
Psoriasis-----706090	3.1	1.9	2.5	1.5	6.2	4.9	11.4	10.9	9.5
Seborrheic keratosis-----22x44x	0.2	-	-	0.4	0.4	4.5	9.7	18.3	24.4
Vitiligo-----716210	0.6	5.5	1.0	3.6	3.0	3.4	5.9	12.6	13.6
Herpes simplex-----096	3.4	5.3	5.1	3.2	5.2	4.8	2.8	3.3	4.9
All other skin conditions-----	78.7	75.5	72.5	101.2	108.1	162.7	174.9	184.1	205.2

¹ Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

SYMBOLS

Data not available----- - - -

Category not applicable----- . . .

Quantity zero----- -

Quantity more than 0 but less than 0.05----- 0.0

Figure does not meet standards of
reliability or precision----- *

Table 3. Prevalence of skin conditions of concern, all types and the most frequently occurring types of conditions, among persons 1-74 years, by part of body affected and sex: United States, 1971-74

Condition and NYU code	Both sexes				Male				Female			
	Total	Hand	Foot	Other	Total	Hand	Foot	Other	Total	Hand	Foot	Other
	Rate per 1,000 persons											
All types of skin conditions of concern---	113.6	10.8	17.9	84.9	127.7	12.6	27.6	87.5	100.3	9.0	8.8	82.5
Diseases of sebaceous glands-----7141-7149	28.2	0.1	0.1	28.0	29.0	-	0.0	29.0	27.5	0.2	0.2	27.1
Acne vulgaris-----714150	23.6	0.1	0.1	23.4	23.1	-	-	23.1	24.1	0.2	0.1	23.8
Cystic acne-----714180	1.7	-	0.0	1.7	3.1	-	0.0	3.1	0.3	-	-	0.3
Acne scars-----714190	0.3	-	-	0.3	-	-	-	-	0.7	-	-	0.7
Xerosis-----714930	0.9	0.0	0.1	0.8	0.8	-	0.0	0.8	0.9	0.0	0.1	0.8
Dermatophytoses-----131	21.6	1.1	12.5	8.0	35.9	1.8	21.3	12.8	8.2	0.4	4.4	3.4
Tinea pedis-----13100-	9.7	0.1	9.3	0.3	17.8	0.2	17.1	0.5	2.0	0.0	2.0	0.0
Tinea unguium-----1312--	4.5	0.2	3.1	1.2	5.7	0.3	3.8	1.6	3.2	0.2	2.3	0.7
Tinea versicolor-----131910	2.7	-	-	2.7	3.5	-	-	3.5	2.0	-	-	2.0
Tinea cruris-----13131-	3.2	-	-	3.2	6.3	-	-	6.3	0.2	-	-	0.2
Tumors-----19x, 22x, 23x, 23y	8.1	0.6	0.4	7.1	8.3	0.5	0.2	7.6	8.1	0.8	0.5	6.8
Malignant-----19x	2.0	0.0	0.1	1.9	2.3	-	0.2	2.1	1.8	0.1	-	1.7
Basal cell (nodular-ulcerative-solid)-19x14x	0.3	-	-	0.3	0.3	-	-	0.3	0.3	-	-	0.3
Basal cell epithelioma-----19x18x	0.8	-	-	0.8	1.3	-	-	1.3	0.3	-	-	0.3
Benign ¹ -----22x	2.4	0.1	0.2	2.1	1.5	-	-	1.5	3.4	0.3	0.4	2.7
Lipoma-----22x959	0.1	-	0.0	0.1	0.2	-	-	0.2	0.0	-	0.0	0.0
Precancerous and not specified-----23x, 23y	3.7	0.5	0.1	3.1	4.5	0.5	-	4.0	2.9	0.4	0.1	2.4
Actinic keratosis-----23x081	3.1	0.5	-	2.6	3.8	0.5	-	3.3	2.4	0.4	-	2.0
Seborrheic dermatitis-----700010	5.4	0.1	0.0	5.3	4.8	0.2	0.1	4.5	5.9	-	-	5.9
Atopic dermatitis/												
eczema-----701, 708300, 708310, 708320	10.8	3.1	1.3	6.4	11.7	3.4	1.9	6.4	10.0	3.0	0.6	6.4
Atopic dermatitis-----708310	4.5	0.6	0.1	3.8	5.1	0.8	0.1	4.2	3.8	0.3	0.1	3.4
Lichen simplex chronicus-----708320	1.9	0.1	0.2	1.6	2.1	-	0.4	1.7	1.8	0.1	0.0	1.7
Hand eczema-----701000	1.1	1.1	-	-	1.0	1.0	-	-	1.2	1.2	-	-
Nummular-----701010	0.8	0.2	0.2	0.4	0.8	0.3	0.3	0.2	0.8	-	-	0.8
Dyshidrotic-----701030	1.6	1.0	0.5	0.1	2.1	1.0	1.1	-	1.2	1.0	0.0	0.2
Ichthyosis/keratosis-----710130, 710150	1.3	-	-	1.3	1.3	-	-	1.3	1.3	-	-	1.3
Folliculitis-----713908	1.8	-	-	1.8	2.7	-	-	2.7	0.9	-	-	0.9
Verruca vulgaris-----696030	1.4	0.8	0.2	0.4	0.9	0.3	0.1	0.5	1.8	1.3	0.2	0.3
Psoriasis-----706090	3.8	0.5	0.0	3.3	3.8	0.7	-	3.1	3.8	0.2	0.1	3.5
Seborrheic keratosis-----22x44x	0.7	-	-	0.7	0.4	-	-	0.4	1.1	-	-	1.1
Vitiligo-----716210	1.4	0.1	0.0	1.3	0.7	0.1	0.1	0.5	2.0	0.0	0.0	2.0
Herpes simplex-----096	0.8	-	-	0.8	0.6	-	-	0.6	0.9	-	-	0.9
All other skin conditions-----	28.3	4.4	3.4	20.5	27.6	5.6	3.9	18.1	28.8	3.1	2.8	22.9

¹Excludes seborrheic keratosis (22x44x), which in the NYU classification is grouped with benign tumors.

TECHNICAL NOTES

The sampling plan for the 65 examination locations in the Health and Nutrition Examination Survey from April 1971 through June 1974 followed a stratified multistage probability design in which a sample of the civilian noninstitutionalized population of the coterminous United States 1-74 years of age was selected. The sample was stratified by geographic region, population density, and rate of population change between 1960 and 1970. Within each stratum, cluster-type sampling was used for selecting households and sample persons to be included in each examination location. The sample design provided for oversampling among persons living in poverty areas, preschool-age children, and women 20-44 years of age.

Prevalence rates of skin conditions are shown as population estimates; that is, the examination findings for each individual have been "weighted" by the reciprocal of the probability of selecting the person. An adjustment for persons in the sample who were not examined and a poststratified ratio adjustment were also made so that the final sample estimates of the population size agree exactly with independent U.S. Bureau of the Census estimates for the civilian noninstitutionalized population of the United States as of November 1, 1972, by color, sex, and age.

Previous issues of *Advance Data from Vital and Health Statistics*

- No. 1 Blood Pressure of Persons 6-74 Years of Age in the United States
(Issued: October 18, 1976)
- No. 2 Hypertension: United States, 1974 (Issued: November 8, 1976)
- No. 3 Height and Weight of Adults 18-74 Years of Age in the United States
(Issued: November 19, 1976)