

# Vision Problems in the U.S.

Prevalence of Adult Vision Impairment and Age-Related Eye Disease in America





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These services are made possible through the generous support of the American public. Together with a network of affiliates, divisions and chapters, it is committed to eliminating preventable blindness in America.



The National Eye Institute (NEI), a component of the National Institutes of Health (NIH), supports and conducts research aimed at improving the prevention, treatment, and rehabilitation of diseases that affect the eye and vision. The NIH, a Federal government agency, is part of the U.S. Department of Health and Human Services. Research is conducted on the NIH campus in Bethesda, Maryland, and at universities, medical schools, hospitals, and other institutions throughout the United States and abroad.

# Age-Related Macular Degeneration

Age-related macular degeneration (AMD) is a condition that primarily affects the part of the retina responsible for sharp central vision. There are two forms:

- 1 Dry AMD (non-exudative)** is the most common form of the disease. Early AMD involves the presence of drusen, fatty deposits under the light-sensing cells in the retina. Late cases of dry AMD may also involve atrophy of the supportive layer under the light-sensing cells in the retina that helps keep those cells healthy. Vision loss in early dry AMD is usually moderate and only slowly progressive. Atrophy in late cases of dry AMD can result in more significant vision loss.
- 2 Wet AMD (exudative)** is less common, but is more threatening to vision. It's called wet AMD because of the growth of tiny new blood vessels (neovascularization) under the retina that leak fluid or break open. This distorts vision and causes scar tissue to form. All cases of the wet form are considered late AMD.

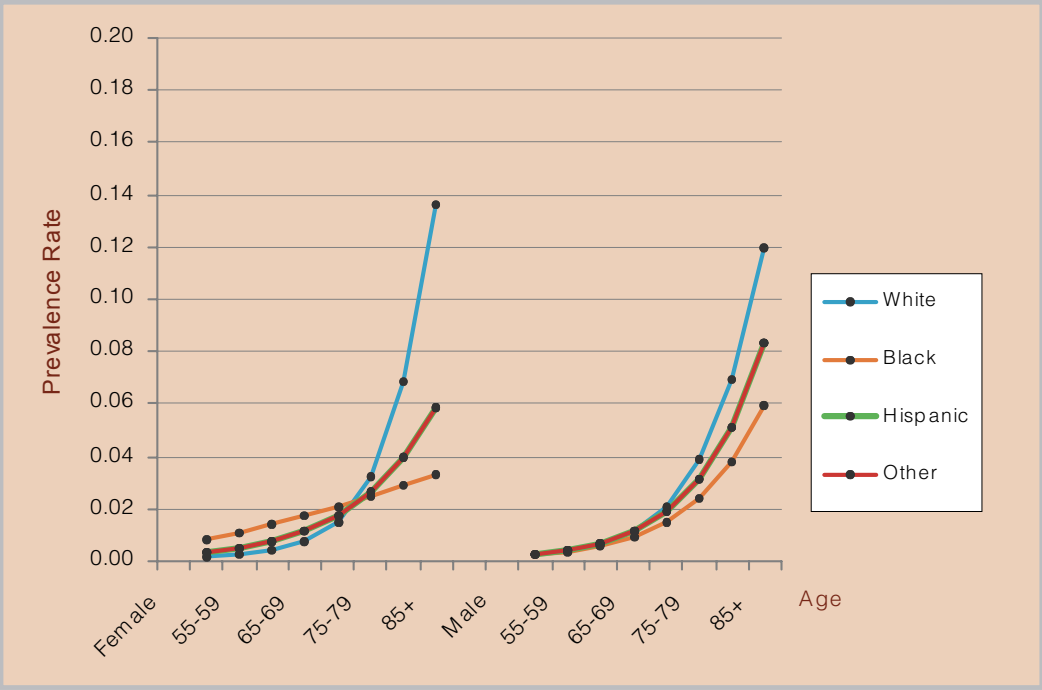
The exact cause of AMD is unknown, but risk factors for the disease include age (rarely affecting those under age 50), White race and cigarette smoking. Research also suggests that long-term diets low in certain antioxidant nutrients may increase the risk of AMD. Because AMD often damages central vision, it is likely the most common cause of legal blindness and vision impairment in older Americans.

Unfortunately, there is no generally-accepted treatment for dry AMD. Laser therapies to destroy leaking blood vessels can help reduce the risk of advancing vision loss in many cases of wet AMD. Research has recently shown that certain doses of zinc, vitamins A and C, and beta-carotene can help control the advance of late AMD, but appear to have no effect in preventing the disease in otherwise healthy individuals.

Only cases of late AMD involving geographic atrophy or neovascularization are included in the prevalence estimates on page 19. Over 1.6 million Americans age 50 and older have late AMD. Age-specific prevalence rates are initially comparable between races, but advance more significantly for Whites after age 75 (see chart on page 19). In Blacks, the disease is more prevalent in women until about age 75 as well.

Because data are lacking for Hispanics and other races, the rates shown below for these populations are an arithmetic average of the rates for Whites and Blacks.

**Estimated Specific Prevalence Rates for AMD**



## Estimated Number of Cases of Age-Related Macular Degeneration in the U.S. Population Age 50 and Older by State, Race and Sex

State	Total	Female	Male	White	Black	Hispanic	Other
<b>Total U.S.</b>	1,651,335	1,046,572	604,764	1,457,167	94,171	58,387	41,611
Alabama	25,476	16,432	9,044	21,547	3,618	111	200
Alaska	1,436	770	667	1,115	26	20	275
Arizona	29,352	17,196	12,156	26,381	326	1,838	807
Arkansas	17,465	11,032	6,433	15,972	1,245	80	168
California	165,476	101,579	63,898	129,406	6,112	15,842	14,116
Colorado	19,729	12,208	7,521	17,874	335	1,173	346
Connecticut	24,314	15,830	8,484	22,871	751	419	273
Delaware	4,491	2,820	1,671	4,019	378	39	54
District of Columbia	2,731	1,816	914	1,083	1,505	68	75
Florida	128,552	76,992	51,560	112,419	5,622	9,248	1,262
Georgia	34,847	22,629	12,218	28,704	5,396	309	439
Hawaii	5,997	3,199	2,798	1,693	18	133	4,153
Idaho	7,174	4,295	2,879	6,983	6	88	98
Illinois	73,428	47,864	25,564	65,237	5,241	1,653	1,296
Indiana	36,354	23,454	12,900	34,452	1,408	257	238
Iowa	23,841	15,714	8,127	23,535	121	84	101
Kansas	18,912	12,334	6,578	18,109	395	218	189
Kentucky	23,582	15,134	8,448	22,484	853	80	165
Louisiana	22,581	14,503	8,079	18,042	3,979	282	278
Maine	9,178	5,887	3,290	9,100	9	15	54
Maryland	27,370	17,496	9,874	22,571	3,840	302	657
Massachusetts	44,363	29,322	15,041	42,297	781	498	786
Michigan	57,268	36,348	20,921	52,192	3,982	431	664
Minnesota	31,852	20,580	11,272	31,190	202	115	345
Mississippi	15,194	9,911	5,284	12,094	2,919	68	113
Missouri	37,271	24,219	13,052	34,979	1,780	177	335
Montana	6,052	3,688	2,363	5,886	4	28	133
Nebraska	12,422	8,089	4,333	12,104	150	90	79
Nevada	8,731	4,889	3,842	7,627	315	410	379
New Hampshire	7,357	4,675	2,681	7,268	13	24	52
New Jersey	53,189	34,239	18,950	46,842	3,186	1,923	1,238
New Mexico	9,064	5,333	3,731	6,482	85	2,041	456
New York	117,638	76,460	41,179	99,840	8,561	5,648	3,589
North Carolina	42,588	27,466	15,122	36,745	5,096	228	518
North Dakota	5,185	3,295	1,890	5,111	2	9	62
Ohio	71,113	45,812	25,301	66,273	3,938	335	567
Oklahoma	21,821	13,928	7,894	19,884	666	180	1,092
Oregon	22,238	13,710	8,528	21,430	121	216	471
Pennsylvania	92,869	60,202	32,667	87,701	3,920	541	707
Rhode Island	7,920	5,256	2,664	7,606	88	104	122
South Carolina	20,552	13,142	7,410	16,804	3,496	96	157
South Dakota	5,852	3,755	2,098	5,720	4	15	113
Tennessee	32,267	20,807	11,460	29,367	2,523	122	254
Texas	92,697	58,030	34,667	73,552	5,960	11,607	1,577
Utah	8,970	5,335	3,636	8,584	23	196	168
Vermont	3,926	2,509	1,416	3,882	4	12	27
Virginia	35,657	22,825	12,832	30,581	4,027	342	707
Washington	33,058	20,374	12,685	31,057	356	385	1,260
West Virginia	12,952	8,239	4,713	12,608	226	34	83
Wisconsin	36,218	23,271	12,947	35,209	552	188	269
Wyoming	2,765	1,681	1,084	2,656	7	62	40

White Female	White Male	Black Female	Black Male	Hisp. Female	Hisp. Male	Other Female	Other Male	State
926,188	530,979	64,439	29,732	32,969	25,417	22,975	18,635	<b>Total U.S.</b>
13,800	7,747	2,455	1,163	60	51	117	83	Alabama
591	524	17	9	11	9	151	124	Alaska
15,524	10,858	209	117	1,014	825	450	357	Arizona
10,070	5,902	824	421	41	39	97	71	Arkansas
80,842	48,564	4,086	2,026	8,954	6,888	7,697	6,420	California
11,148	6,726	223	112	639	534	197	149	Colorado
14,912	7,958	528	223	241	178	149	124	Connecticut
2,512	1,508	258	120	21	18	30	25	Delaware
693	390	1,036	469	43	24	44	31	District of Columbia
67,193	45,226	3,807	1,816	5,292	3,956	700	562	Florida
18,425	10,279	3,791	1,605	165	144	248	191	Georgia
945	748	9	9	68	64	2,176	1,977	Hawaii
4,195	2,788	3	3	44	44	52	45	Idaho
42,642	22,595	3,607	1,634	885	768	729	566	Illinois
22,242	12,210	946	462	131	126	136	102	Indiana
15,535	8,000	80	41	44	40	55	46	Iowa
11,851	6,259	261	134	114	104	108	81	Kansas
14,418	8,066	577	277	44	36	96	70	Kentucky
11,499	6,543	2,684	1,294	166	116	154	124	Louisiana
5,844	3,255	5	4	8	7	30	24	Maine
14,276	8,294	2,675	1,165	181	121	363	294	Maryland
28,055	14,242	536	245	288	210	443	344	Massachusetts
33,073	19,118	2,676	1,306	226	205	372	292	Michigan
20,193	10,996	133	69	59	55	194	152	Minnesota
7,878	4,216	1,932	987	37	31	64	49	Mississippi
22,707	12,272	1,222	558	97	80	193	143	Missouri
3,596	2,291	2	2	15	13	76	57	Montana
7,900	4,204	101	48	45	45	44	35	Nebraska
4,251	3,376	206	108	219	191	212	167	Nevada
4,628	2,640	8	5	12	12	28	24	New Hampshire
30,211	16,631	2,220	966	1,116	807	692	547	New Jersey
3,919	2,563	53	32	1,108	933	253	203	New Mexico
64,922	34,918	6,114	2,448	3,440	2,207	1,984	1,605	New York
23,516	13,229	3,530	1,566	117	111	303	215	North Carolina
3,253	1,858	1	1	5	5	35	27	North Dakota
42,648	23,626	2,666	1,272	179	157	320	247	Ohio
12,750	7,134	443	223	94	86	641	451	Oklahoma
13,259	8,171	78	43	114	102	258	213	Oregon
56,808	30,893	2,708	1,213	294	247	392	315	Pennsylvania
5,067	2,539	59	29	61	42	68	53	Rhode Island
10,598	6,206	2,402	1,094	50	45	92	65	South Carolina
3,679	2,041	2	2	8	7	66	48	South Dakota
18,868	10,499	1,726	797	65	57	147	107	Tennessee
46,625	26,927	4,033	1,927	6,491	5,116	881	696	Texas
5,126	3,458	13	9	105	91	90	77	Utah
2,486	1,396	2	2	7	5	14	13	Vermont
19,491	11,090	2,726	1,300	202	140	406	301	Virginia
19,241	11,815	226	130	199	186	708	553	Washington
8,021	4,587	152	74	19	16	47	36	West Virginia
22,637	12,572	384	168	98	90	153	116	Wisconsin
1,623	1,033	4	3	32	30	22	18	Wyoming