

Magnitude and causes of visual impairment - No cause for complacency

Since the estimates of the 1990s, new data based on the 2002 population show a reduction in the number of people globally who are blind or visually impaired, a decrease in the number of people blind from the effects of infectious diseases, but an increase in the number of people who are blind from conditions related to longer life spans. The new information is not a cause for complacency but a call to modify the health care agenda to include the management of the diseases that are now becoming prevalent.

Magnitude of visual impairment

- Globally, in 2002 more than **161 million people were visually impaired**, of whom **124 million people had low vision** and **37 million were blind**. * However, refractive error as a cause of visual impairment was not included, which implies that the actual global magnitude of visual impairment is greater.
- Worldwide for each blind person, an average of 3.4 people have low vision, with country and regional variation ranging from 2.4 to 5.5.
- These figures -- the first global estimates since the early 1990s -- are the best achievable scientific estimates of the global burden of visual impairment and are the result of new studies carried out in nearly all WHO regions, which have substantially updated the epidemiological data.

Distribution of visual impairment

By age: Visual impairment is unequally distributed across age groups. More than **82% of all blind are 50 years of age and older**, although they represent only 19% of the world's population. Due to the expected number of years lived in blindness (blind years), childhood blindness remains a significant problem, with an estimated **1.4 million blind children** below age 15.

By gender: Available studies consistently indicate that in every region of the world, and at all ages, **females have a significantly higher risk** of being visually impaired than males.

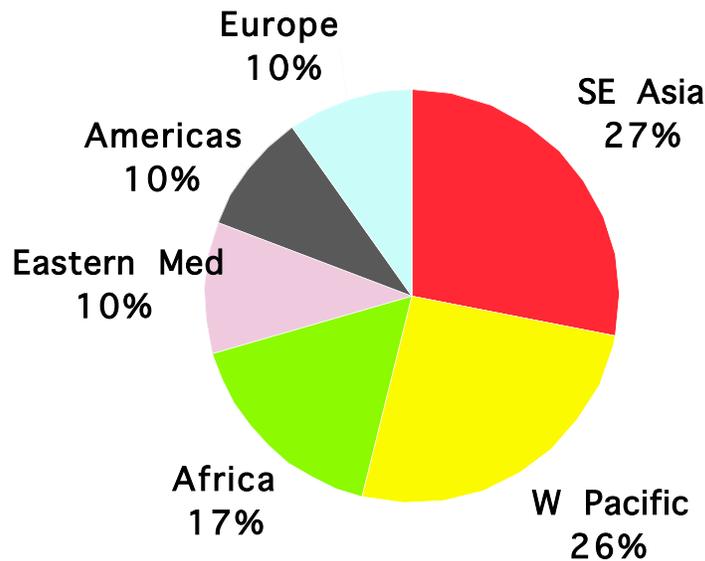
Geographically: Visual impairment is not distributed uniformly throughout the world. More than **90% of the world's visually impaired live in developing countries**.

Global estimate of visual impairment, by WHO region (millions), 2002

	Afr	Amr	Emr	Eur	Sear	Wpr	Total
Population	672.2	852.6	502.8	877.9	1,590.8	1,717.5	6,213.9
No of blind people	6.8	2.4	4.0	2.7	11.6	9.3	36.9
% of total blind	18%	7%	11%	7%	32%	25%	100%
No with low vision	20.0	13.1	12.4	12.8	33.5	32.5	124.3
No with visual impairment	26.8	15.5	16.5	15.5	45.1	41.8	161.2
% of total visually impaired	17%	10%	10%	10%	27%	26%	100%

Afr, WHO African Region; Amr, WHO Region of the Americas; Emr, WHO Eastern Mediterranean Region; Eur, WHO European Region; Sear, WHO South-East Asia Region; Wpr, WHO Western Pacific Region.

Global estimate of visual impairment by WHO region



Causes of visual impairment

Except for the most developed countries, **cataract** remains the leading cause of blindness in all regions of the world. Associated with ageing, it is even more significant as a cause of low vision in all sub-regions.

Glaucoma is the second leading cause of blindness globally as well as in most regions, with **age-related macular degeneration (AMD)** ranking third on the global scale. However, in developed countries, AMD is the leading cause of blindness, due to the growing number of people over 70 years of age.

Other major causes are **trachoma**, other **corneal opacities**, **diabetic retinopathy**, and eye **conditions in children** (e.g. cataract, retinopathy of prematurity and vitamin A deficiency).

Global causes of blindness as a proportion of total blindness in 2002

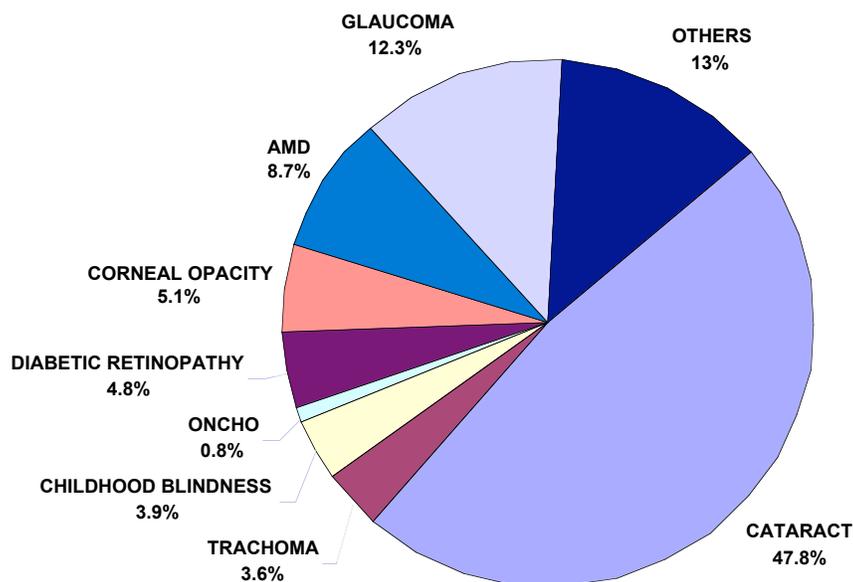


Figure Reference: WHO 04.138

The magnitude of avoidable (preventable and treatable) blindness

Cataract, glaucoma, corneal opacity, diabetic retinopathy, onchocerciasis, childhood blindness, trachoma, and some other causes of blindness can potentially all be prevented and/or treated. WHO estimates that, globally, up to 75% of all blindness is avoidable. However, the proportion of the specific causes of blindness varies considerably from Region to Region, depending on local circumstance. Only about half the cases of childhood blindness are avoidable.

Global trends in the magnitude of visual impairment and VISION 2020

- The first global estimate on the magnitude and causes of visual impairment was based on the 1990 world population data (38 million blind). This estimate was later extrapolated to the 1996 world population (45 million blind), and to the projected 2020 world population (76 million), indicating a twofold increase in the magnitude of visual impairment in the world by 2020. It provided the basis for the 1999 launch of VISION 2020, the Global Initiative for the Elimination of Avoidable Blindness.
- The extent of the global burden of visual impairment in 2002 is not strictly comparable to the previous estimates of 1990, which indicated there were 148 million visually impaired, of which 38 million were blind. While the 2002 world population has increased by 18.5% as compared to 1990, the population 50 years of age and older has increased by nearly 30%. The population increase is more prominent in developing countries. Taking into account the changes in world population over the past 12 years, the extent of blindness and visual impairment in 2002 appears to be lower than was projected – 37 million instead of the projected 52 million.
- It is likely that the change is due to two major factors:
 1. More data from population-based studies on visual impairment carried out over the last decade are available allowing for more accurate estimates to be made.
 2. Significant achievements have been made in the prevention and management of avoidable blindness along the lines of the "VISION 2020: The Right to Sight" priorities. These include:
 - Increased public awareness and utilization of eye health care services
 - Increased availability and affordability of eye health care services
 - Increased global political commitment to prevention of visual impairment
 - Increased professional commitment to prevention of visual impairment
 - Commitment and support of non-governmental organizations
 - Involvement and partnership with the corporate sector
 - More effective primary eye care activities as an integral part of the primary health care system which have contributed to the decline in vision loss from trachoma, onchocerciasis, vitamin A deficiency and even from cataract through better services including outreach case finding and eye health education.
 - Impressive successes with elimination of blindness efforts in India, Morocco, Nepal, Sri Lanka, Thailand, the Gambia, and other countries.

Notwithstanding the recent achievements in the prevention and control of avoidable blindness, several global challenges require further attention:

- An ever-increasing number of people are at risk of visual impairment as populations grow and demographic shifts move towards the predominance of older age groups.
- Potentially blinding eye conditions such as age related macular degeneration (AMD), diabetic retinopathy and glaucoma are increasing as the number of people affected grows. These are non-communicable chronic eye diseases to which the principles of long term care including issues of cost of treatment and compliance (adherence) apply. Additionally, more programmes for those with low vision will need to be made available.
- The global disparity and inequity in the availability of eye health care services still fails to prevent and control an overwhelmingly increasing magnitude of avoidable blindness in the highly populated poorest parts of the world.

Poverty underlies not only the causes, but also the perpetuation of ill health, including eye health. Blindness remains a key barrier to development. Health is the centrepiece of development and poverty alleviation; continuing to eliminate avoidable blindness among the poorest of the poor is a moral imperative.