The Finnish Register of Visual Impairment

# Annual Statistics 2024

Finnish Institute for Health and Welfare

# Sisällysluettelo

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# What is the Finnish Register of Visual Impairment?

The purpose of the Finnish Register of Visual Impairment is to study the incidence of visual impairment in Finland. The Register serves as a basis for preventive measures and treatment of visual impairment, as well as for the planning of rehabilitation and other special services for persons with visual impairment. In addition, the Register provides research material on ophthalmological diseases and visual impairment, and aims to promote and support research in the field.

The Register is maintained by the Finnish Federation of the Visually Impaired and operates under the auspices of the National Institute for Health and Welfare (THL). The Register was established by the National Board of Health in 1983. Its operation is regulated by the Act (552/2019) on the Secondary Use of Social and Health Data. Health care authorities, institutions, and personnel are required, under the above-mentioned Act, to forward to the Register information on persons with visual impairment as specified in the related Decree.

## Notification of Visual Impairment

Notification must be made by a specialist in ophthalmology or by a hospital's ophthalmological unit. A notification must be submitted if the patient's corrected visual acuity is permanently less than 0.3 in the better eye, or if the person must, for some other reason, be considered comparable to a person with a permanent visual impairment as described above.

## Data in the Register

A notification form is used to collect the personal data of persons with visual impairment and to record information on the nature (diagnoses), severity (visual acuity and visual field), and etiology of the impairment, as well as on multiple impairments and the patient's visual abilities in relation to reading and mobility. When records are updated, the Central Population Register provides information on the individual's mother tongue, marital status, and, where applicable, date of death. The cause of death is reported by the Central Statistical Office.

All information compiled in the Finnish Register of Visual Impairment is confidential. Information concerning an individual with a visual impairment is not released to any third party without the approval of the National Institute for Health and Welfare.

## Maintenance of the Register

A central goal of the Register is to compile as comprehensive a database as possible on visual impairment to serve the needs of researchers and other interested parties. Special statistics are drawn up based on the records in the Register. Key statistics illustrating the

profile of visual impairment are published in the statistical section of the Register's annual report.

## Promotion of Research on Visual Impairment

The Register promotes research on visual impairment by providing special statistics based on its records and by offering bibliographical references to researchers and students. In addition, the Register surveys study topics related to visual impairment, maintains contacts with researchers in the field, participates in joint research projects and international activities, and organizes research seminars.

## Administration and Contact Information

The Register operates on the premises of the Finnish Federation of the Visually Impaired in Helsinki.

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# Annual Statistics 2024

The Register has been collecting information about visually impaired individuals for 40 years (since January 1, 1983). It is estimated that there are approximately 55,000 visually impaired people in Finland (population 5.5 million). The Register contains data on 66,827 visually impaired persons, of whom 17,745 were alive as of December 31, 2024. Each year, 1,200–2,000 new registrations are recorded. New entries in recent years have not significantly altered the overall profile of visual impairment established through the Register. It can be assumed that the Register contains a representative sample of individuals who have accessed ophthalmological health care services in Finland since 1983.

The Register is not exhaustive; it is based on a sample. Therefore, the main distributions describing the registered individuals are presented in the following tables as relative frequencies (percentage distributions).

### Table 1. Gender

Registered visual impairment in Finland
in 2024 (total and new registerations)

| | Total % | New 2024 % |
|---|---|---|
| Female | 60,0 | 64,0 |
| Male | 40,0 | 36,0 |
| Total | 100,0 | 100.0 |
| **N** | **17 745** | **1782** |

### Table 2. Age groups

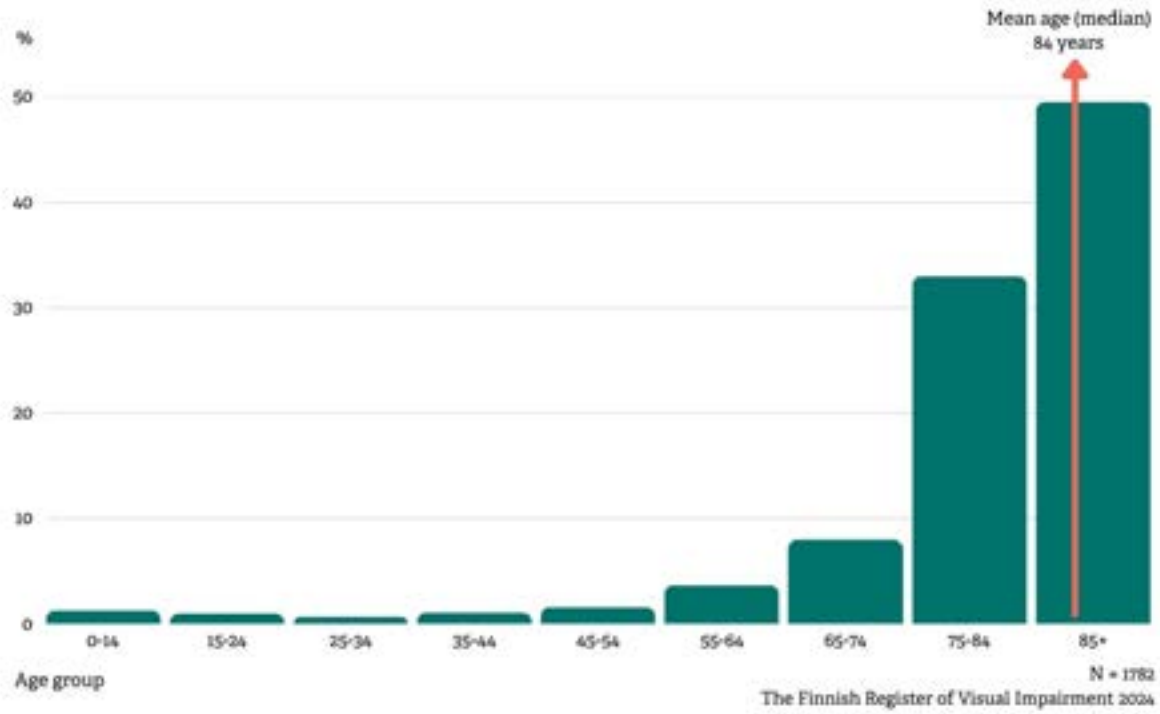
Registered visual impairment in Finland
in 2024 (total and new registerations)

| Age | Total % | New 2024 % |
|---|---|---|
| 0–14 | 2,0 | 1,3 |
| 15–24 | 3,4 | 1,0 |
| 25–34 | 5,0 | 0,7 |
| 35–44 | 5,0 | 1,1 |
| 45–54 | 5,6 | 1,6 |
| 55–64 | 8,0 | 3,7 |
| 65–74 | 11,1 | 8,0 |
| 75–84 | 21,0 | 33,0 |
| 85 + | 38,8 | 49,5 |

| Age | Total % | New 2024 % |
|---|---|---|
| **Total** | **100.0** | **100.0** |
| **N** | **17 745** | **1 782** |
| 0–17 | 2,8 | 1,7 |
| 18–39 | 10,0 | 2,0 |
| 40–64 | 16,2 | 5,8 |
| 65–84 | 32,2 | 41,0 |
| 85 + | 38,8 | 49,5 |
| **Mean age** | **79** | **84** |

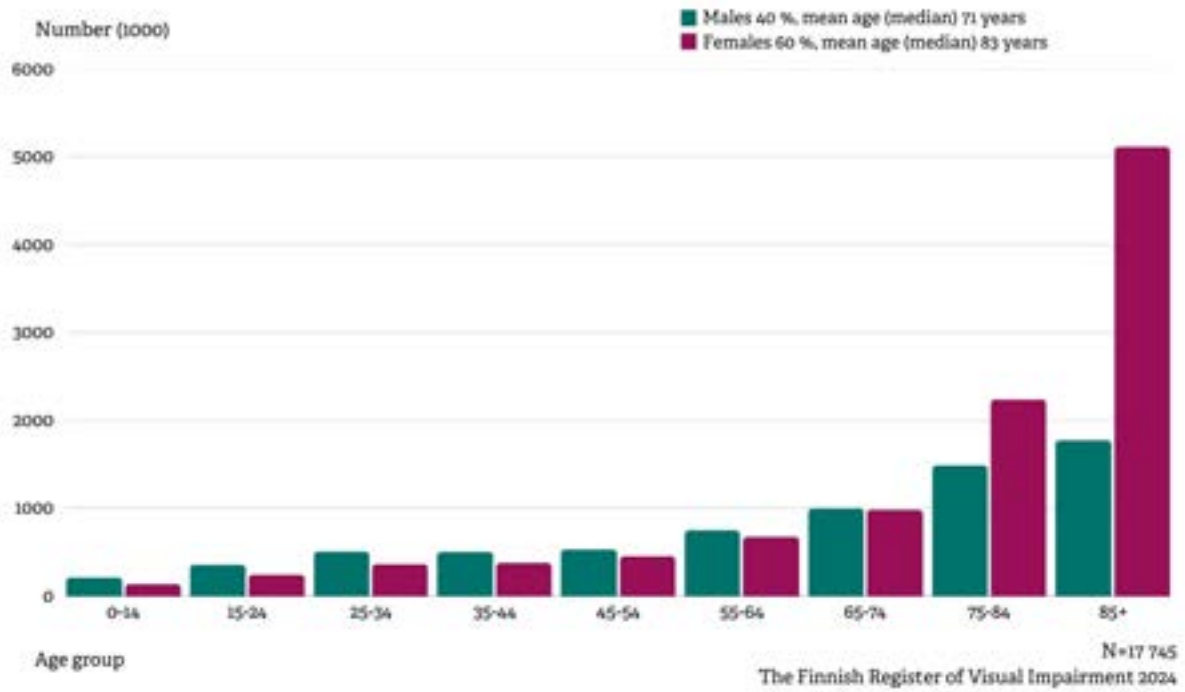
## Figure 1. Age groups

New registrants in Finland in 2024 (N = 1 782)



## Figure 2. Age and gender

All registrants in Finland in 2024 (N = 17 745)




## Figure 3. New registerations by age group, 1983–2024, %

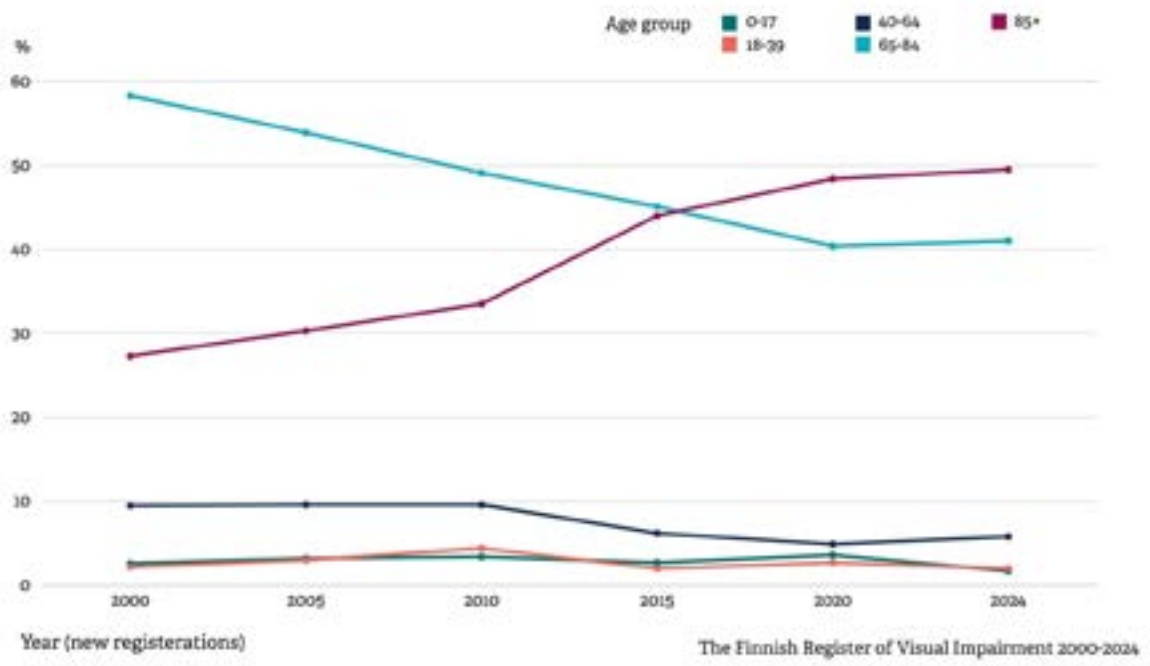


Figure 3 shows the percentage distribution of newly registered individuals with visual impairments by age group from 2000 to 2024. In the 2000 s century the proportion of 0–17-year-olds among new registrations has decreased from 8,2 % to less than two percent. The proportion of 18–39-year-olds among new registrations has steadily declined throughout the observation period. It reached its lowest point (1,4 %) in 2018 and has remained between two and three percent since then, in 2024 it was 2 %. The proportion of 40–64-year-olds among new registrations first time dropped below 10 % in 2000. Since then, it has fluctuated between 13 % and 5 %, in 2024 it was 5,5 %. The proportion of people aged 65 and older has increased significantly over the years of registration. In the 2000 s, this proportion has remained around 80 %. When looking at people aged 65-84 and over 85, it's noticed that the proportion of people over 85 has steadily increased in the 2000 s and the proportion of people aged 65-84 has decreased. In 2024, 41 % were aged 65-84 and 49,5 % were over 85.

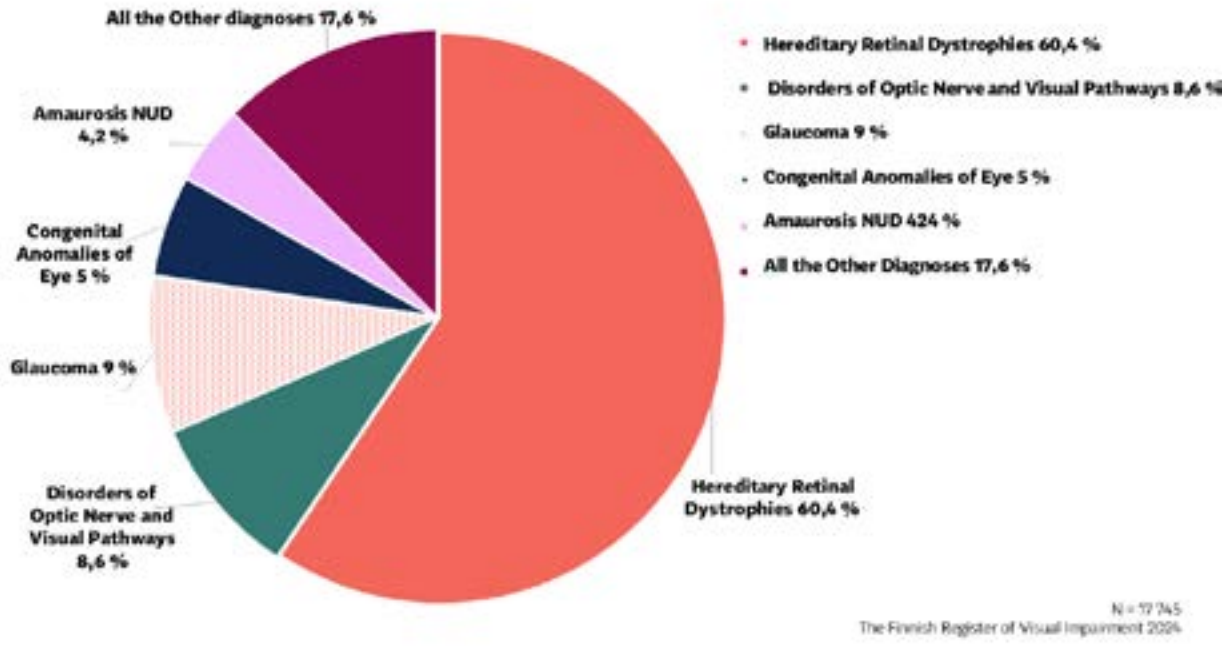
## Diagnosis of Visual Impairment

The primary diagnosis recorded is the one most recently impairing the vision of the better eye. Up to three additional diagnoses can also be reported. Diagnosis distributions are based on primary diagnoses, of which there are 357 in the Register. Diagnoses are classified according to a Finnish adaptation of the ICD-9 classification for ophthalmological diseases, which is more detailed than ICD-10 for eye diseases.

Distribution of Diagnoses

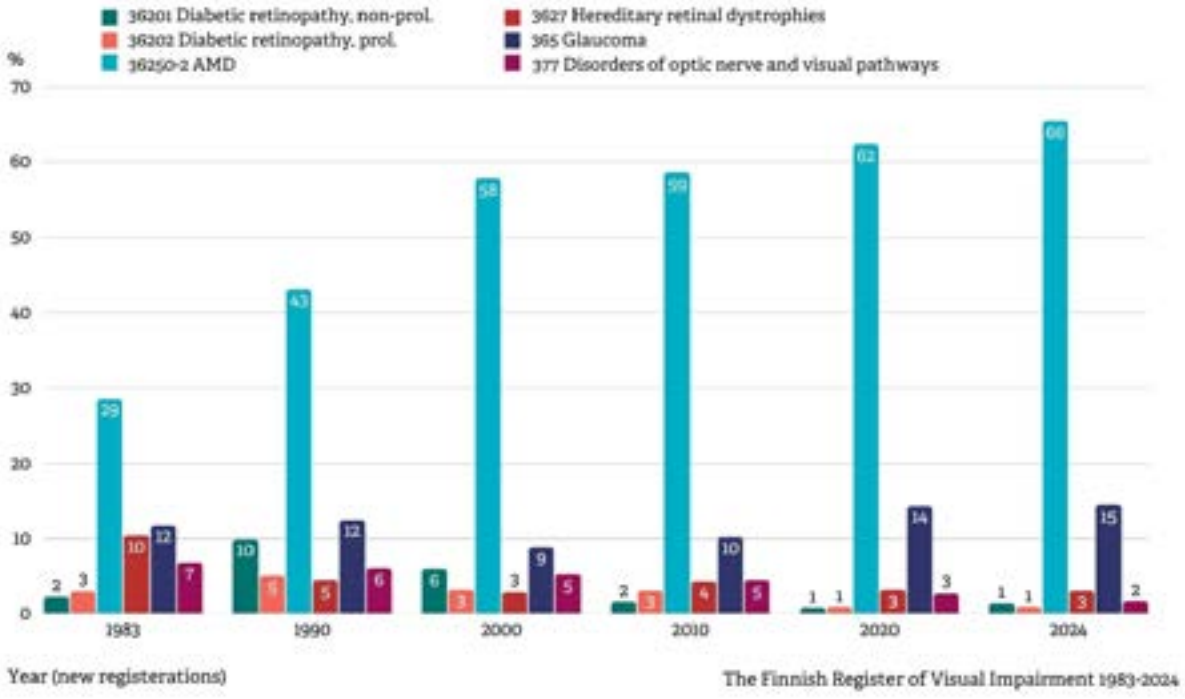
The etiology of visual impairment is strongly age-related. Table 5 and Figure 7 show all registered individuals by primary diagnosis. In unclear cases, codes for unspecified visual loss or blindness are used.

## Figure 4A. All registerations by primary diagnoses, 2024



The leading cause of visual impairment in Finland is age-related macular degeneration (AMD), accounting for 41 % of all diagnoses, followed by hereditary retinal dystrophies (10,3 %), and glaucoma (9 %). Other notable causes include diseases of the visual pathways (8,6 %), congenital developmental disorders (5 %), unspecified visual loss (4,2 %), and diabetic retinopathy (3,1 %). These six categories represent 75 % of all diagnoses. Among new registrations in 2024, AMD was dominant (65,5 %) with glaucoma (14,5 %). Next are hereditary retinal dystrophies diseases 2,6 %, diabetic retinopathy 2,2 % and the visual pathways diseases 2 %.

## Figure 4B. New registerations by primary diagnoses, 1983–2024, %




Trends from 1983–2024 show:

- A continuous rise in AMD cases from 29 % to 66 %.
- The prevalence of glaucoma has been over 10 % in recent years and has now risen to 15 %.
- A decline in diseases of the visual pathways, non-proliferative diabetic retinopathy, and hereditary retinal dystrophies.

### Diagnoses by Age Group

Among children and adolescents (0–17 years), the most common causes are diseases of the visual pathways (26,5 %) and congenital developmental disorders (23,3 %), followed by unspecified visual loss (10,8 %) and hereditary retinal dystrophies (8,4 %).

Among working-age adults (18–64 years), hereditary retinal dystrophies (20,8 %) and diseases of the visual pathways (20,3 %) are most common, with congenital disorders (13,4 %). Among new cases most common are hereditary retinal dystrophies (20,9 %), unspecified visual loss (15,8 %) and pathological myopia (15,1 %).

Among the elderly (65+ years), AMD is overwhelmingly the leading cause (57,5 %), followed by glaucoma (11,5 %) and diseases of the visual pathways (6,4 %). In 2024, AMD accounted for 72 % of new elderly registrations.

## Table 3. Principal diagnoses of Visual Impairment by age groups

Registered visual impairment in Finland in 2024, total distribution and new registerations

### A. AGE GROUP 0–17 YEARS

| | Total % | New 2024 % |
|---|---|---|
| Disorders of optic nerve and visual pathways | 26,5 | 19,4 |
| - cortical blindness | 12,7 | 6,5 |
| Congenital anomalies of eye | 23,3 | 6,5 |
| Hereditary retinal dystrophies | 8,4 | 18,2 |
| Amblyopia NUD | 10,8 | 19,4 |
| Albinism | 5,6 | 0 |
| Nystagmus | 0,2 | 0 |
| ROP, retinopathy of prematurity | 2,2 | 3,2 |
| Disorders of refraction and accomodation | 2,8 | 3,2 |
| Strabismus otc. | 3,4 | 3,2 |
| Other diagnoses | 5 | 6,5 |
| **0–17 years total (total N = 498, new cases N = 31)** | **100.0** | **100.0** |

### B. AGE GROUP 18–64 YEARS

| | Total % | New 2024 % |
|---|---|---|
| Hereditary retinal dystrophies | 20,8 | 20,9 |
| Disorders of optic nerve and visual pathways | 20,3 | 8,6 |
| - optic atrophy | 10,8 | 5,0 |
| Congenital anomalies of eye | 13,4 | 0 |
| Amblyopia NUD | 5,5 | 15,8 |
| Diabetic retinopathy | 2,2 | 5,8 |
| Visual field defectes, other vis. disturbances | 3,5 | 0 |
| ROP, retinopathy of prematurity | 8,3 | 1,4 |
| Glaucoma | 2,6 | 2,9 |
| High myopia (myopia maligna) | 3,4 | 15,1 |
| Disorders of choroid | 2,6 | 2,2 |
| Nystagmus (Irregular eye movement) | 1,8 | 0 |

| | Total % | New 2024 % |
|---|---|---|
| Amaurosis NUD | 2,4 | 0 |
| Disorders of cornea | 0,8 | 5,8 |
| Other diagnoses | 7,1 | 16,5 |
| **18–64 years total (total N = 4 656, new cases N = 139)** | **100.0** | **100.0** |

**C. AGE GROUP 65+ YEARS**

| | Total % | New 2024 % |
|---|---|---|
| AMD, Age-related macular degeneration | 57,5 | 72,0 |
| Glaucoma | 11,5 | 14,7 |
| Hereditary retinal dystrophies | 2,6 | 1,2 |
| Disorders of optic nerve and visual pathways | 6,4 | 0,7 |
| Diabetic retinopathy | 1,6 | 0,7 |
| Amblyopia NUD | 2,4 | 1,7 |
| Disorders of cornea | 1,4 | 0,4 |
| Retinal hole | 2,5 | 1,0 |
| High myopia (myopia maligna) | 0,5 | 0,1 |
| Retinal vascular occlusion | 1,6 | 1,3 |
| Other diagnoses | 7,0 | 3,3 |
| **65+ years total (total N = 12 591, new cases N = 1 612)** | **100.0** | **100.0** |

## Table 4. Age at the onset of Visual Impairment

Registered visual impairment in Finland in 2024
(total and new registerations)

| | Total % | New 2024 % |
|---|---|---|
| 0 | 9,7 | 0,2 |
| 1–17 | 5,0 | 0,8 |
| 18–39 | 6,5 | 0,5 |
| 40–64 | 9,8 | 2,0 |
| 65+ | 29,1 | 40,3 |
| Unknown/not reported | 40,0 | 56,1 |
| **Total** | **100.0** | **100.0** |
| **N** | **17 745** | **1 782** |

## Table 5. Categories of Visual Impairment by WHO´s definition

Registered visual impairment in Finland in 2024 (N = 17 745)

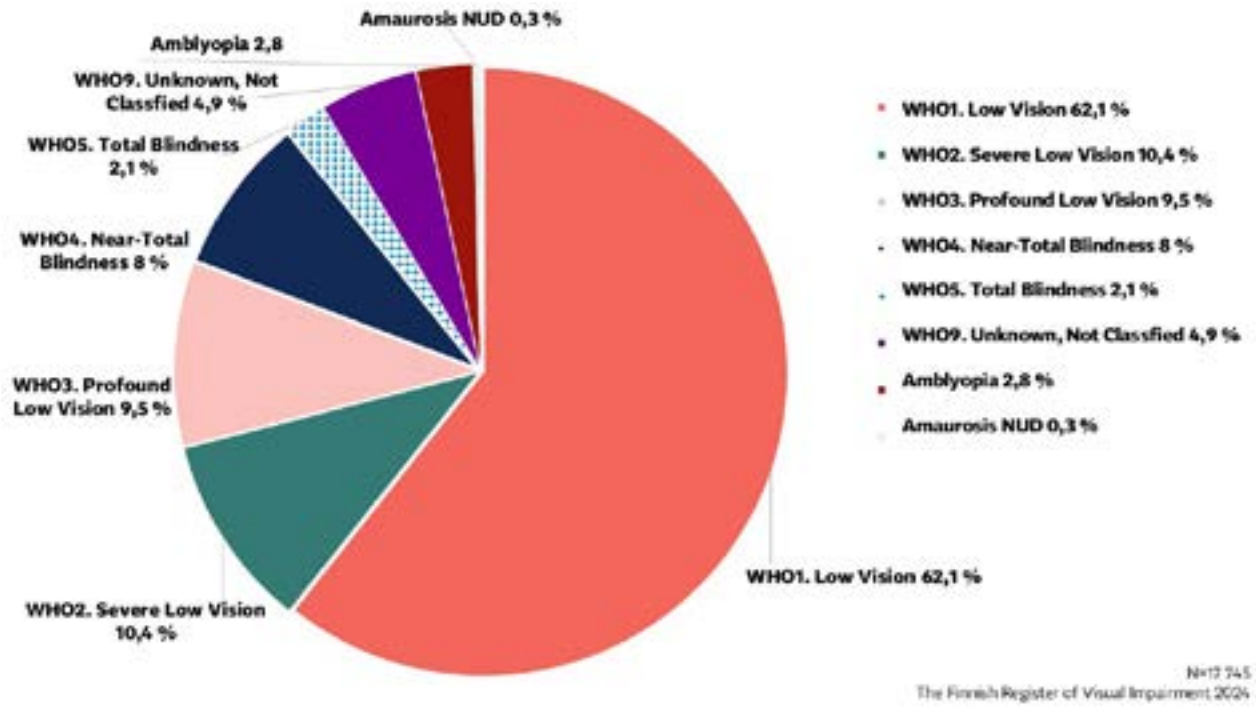
| | Visual acuity | Visual field (Ø) | Total % | New 2024 % |
|---|---|---|---|---|
| 1 Moderate low vision | less than 0.3 → ≥ 0.1, near vision <0.3 | | 62,1 | 78,5 |
| 2 Severe low vision | less than 0.1 → ≥ 0.05 | | 10,4 | 9,0 |
| low vision, not specif | | | 2,8 | 0,2 |
| **Low vision total** | less than 0.3 → ≥ 0.05 | | **75,2** | **87,7** |
| 3 Profound low vision | less than 0.05 → ≥ 0.02 | less than 20° | 9,5 | 6,8 |
| 4 Near-total blindness | less than 0.02 → 1/∞ | less than 10° | 8,0 | 3,8 |
| 5 Total blindness | 0 | | 2,1 | 0,4 |
| blindness not specified | | | 0,3 | 0,0 |
| **Blindness total** | less than 0.05 | less than 20° | **19,9** | **11,0** |
| 9 Unknown (Other) | | | 4,9 | 1,3 |
| **Total** | | | **100.0** | **100.0** |
| **N** | | | **17 745** | 1782 |

## WHO’s Classification of Visual Impairment Severity

The register follows the WHO's recommended classification for the severity of visual impairment, which is supplemented by categories for "Unspecified Visual Impairment" (amblyopia) for the visually impaired and "Unspecified Blindness" (amaurosis) for the blind.

Among registrants, 75,2 % are visually impaired, 19,9 % are blind, and around 5 % fall under the "severity not specified" category.

## Figure 5. Categories of Visual Impairment by WHO´s Definition with Finnish Modification 2024, %




For the visually impaired, 62,1 % are categorized as WHO category 1 (mild visual impairment), and 10,4 % are in category 2 (moderate visual impairment). The unspecified impairment category (amblyopia) accounts for 2,8 %. Among those classified as blind, 9,3 % fall under WHO category 3 (severely visually impaired), and 8 % under category 4 (nearly blind). Only 2,1 % are totally blind (WHO category 5), and less than half a percent are categorized as "unspecified blindness."

## Table 6. Native Language

Registered visual impairment in Finland in 2024
(total and new registerations)

| | Number | New 2024 |
|---|---|---|
| Finnish | 15 883 | 1600 |
| Swedish | 1032 | 116 |
| Russian | 137 | 21 |
| Arabic | 93 | 6 |
| Sami | 9 | 1 |
| Other, unknown/not reported | 648 | 45 |
| **Total** | **100.0** | **100.0** |
| **N** | **17 745** | **1782** |

The distribution of native languages among the registered individuals is shown in Table 7. 15 883 of the registered individuals speak Finnish, and 1032 speak Swedish. After these two dominant language groups, the largest group is Russian speakers, who make up 137 of the registered individuals. There are 9 individuals who speak Sami (Northern Sami), which is one of the domestic languages.

There are 64 languages spoken by registered visually impaired individuals in Finland. Following the aforementioned three domestic languages and Russian, the next most spoken languages are Arabic (101), Estonian (60), Somali (51), English (38), Kurdish (38), Albanian (17), Farsi (18), Turkish (19), Vietnamese (14), Ukrainian (17), German (10), Spanish (11), Bosnian (9), Bulgarian (9), Chinese (10) and Romanian (10).

The native language distribution of newly registered individuals in 2024 follows the same pattern as that of all registered individuals. The proportion of individuals who speak languages other than Finnish, Swedish, Sami, or Russian remains the same.