

Garo Meghrigian Institute for Preventive Ophthalmology 2023 Annual report

Mission: Prevent Avoidable Blindness



Source: <https://www.ndcfsfoundation.org/ending-avoidable-blindness>

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Executive Summary

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Avedisian Onanian Center for Health Services Research and Development at the American University of Armenia's (AUA) Turpanjian College of Health Sciences (CHS). Meghriqian Institute's mission is to prevent avoidable blindness in Armenia.

This Annual Report highlights the main activities and accomplishments of the Meghriqian Institute in 2023.

In July 2023, the Meghriqian Institute performed eye screening to identify vision problems or other eye disorders among patients with diabetes in the Lori province of Armenia. Overall, the team screened 428 people aged 24 to 89: 387 individuals with diabetes integral to the project and an additional 41 non-diabetics beyond the project priority. Following the screening, in September 2023, the Meghriqian Institute distributed 345 spectacles to people with diabetes who were identified as having uncorrected refractive errors and unaddressed presbyopia.

In October and November 2023, the Meghriqian Institute's qualified professionals performed eye screenings to identify vision problems or other eye disorders among forcibly displaced people from Artsakh. Overall, the team screened 197 people aged 50 and above. Based on the screening results, the Meghriqian Institute distributed 218 spectacles to those who were identified as having uncorrected refractive errors and unaddressed presbyopia. Moreover, 32 people who were diagnosed with eye diseases, such as cataract, glaucoma, diabetic retinopathy, maculopathy, allergic conjunctivitis, and dry eye, received medication from the Meghriqian Institute.

On October 12, Garo Meghriqian Institute for Preventive Ophthalmology celebrated World Sight Day (WSD) 2023. This international awareness day is dedicated to focusing on eye health issues throughout the globe. This year, the WSD theme was "*Love Your Eyes at Work*," prioritizing eye health in the workplace. Within that framework, the Meghriqian Institute organized a workshop for the AUA community on Computer Vision Syndrome (CVS), a group of eye and vision-related problems that result from prolonged use of computers or digital devices. The Meghriqian

Institute also developed an information booklet to raise awareness of CVS, detailing its symptoms, risk factors, and prevention methods. The booklet was distributed to interested individuals. In addition, the Meghriyan Institute organized an eye screening event for the AUA community, with 43 participants taking part.

CHS research assistant Adena Alahverdian (MPH '22) participated as a panel speaker in the online conference titled “International Webinar on World Sight Day,” where she presented the Meghriyan project “Preserving Vision in the High-Tech World: CVS.” The conference was organized by the St. Andrews Education Foundation, St. Andrews College of Nursing, Pune, Maharashtra, Department of Medical-Surgical Nursing in association with Know the Glow (U.S.) and the Manila Central University Department of Optometry (Philippines).

In November 2023, Meghriyan Institute with assistance from the Republic of Armenia Ministry of Labor and Social Affairs, launched an eye screening program for socially vulnerable children. The initiative aimed to decrease visual impairment among the target population through the provision of comprehensive ophthalmic examination and the distribution of eyeglasses to those in need. The staff of the Meghriyan Institute visited the Ajapnyak Children’s Social Care Center and Zatik Child Assistance Center in Yerevan, both of which serve socially vulnerable and orphaned children. Overall, 161 out of 170 children participated in the detailed eye screenings. In January 2024, the Meghriyan Institute distributed 19 eyeglasses to children who were diagnosed with refractive errors such as myopia, hyperopia, and astigmatism.

In February 2023, the Garo Meghriyan Institute for Preventive Ophthalmology published a new article titled [“Nationwide Rapid Assessment of Avoidable Blindness \(RAAB\) in Armenia”](#) in the *Journal of Ophthalmic Epidemiology*, an international, highly regarded peer-reviewed journal that focuses on eye and vision health in the fields of epidemiology, public health, and the prevention of blindness. The study was authored by Naira Khachatryan (MPH ‘97), M.D, DrPH; Aida Giloyan (MPH ‘07), M.S.; Ala Paduca, M.D.; Hans Limburg, M.D., Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

In August 2023, the Garo Meghriyan Institute for Preventive Ophthalmology published a new article titled [“Factors associated with health-related quality of life among people with visual impairments living in nursing homes in Armenia: a cross-sectional study.”](#) The research article appeared in the *Journal of Disability and Rehabilitation*, an international, highly regarded peer-

reviewed journal. The study was authored by Aida Giloyan (MPH '07), M.S.; Tsovinar Harutyunyan (MPH '99), Ph.D.; Ani Babayan M.D.; and Varduhi Petrosyan, M.S., Ph.D.

In August 2023, the Garo Meghriyan Institute for Preventive Ophthalmology published a new article titled “[Cataract Blindness in Armenia: The Results of Nationwide Rapid Assessment of Avoidable Blindness \(RAAB\)](#).” The research article appeared in the Journal of Ophthalmic Epidemiology, an international peer-reviewed journal that focuses on eye and vision health in the fields of epidemiology, public health, and the prevention of blindness. The study was authored by Aida Giloyan (MPH '07), M.S.; Naira Khachatryan (MPH '97), M.D, DrPH; Ala Paduca, M.D.; Hans Limburg, M.D., Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

In August 2023, Meghriyan Institute published a new study titled “[Health-Related Quality of Life after Cataract Surgery in Armenia: A Cross-Sectional Survey](#).” The research article appeared in the Journal of Healthcare, an international, scientific, [peer-reviewed](#), open-access journal on healthcare systems, industry, technology, policy, and regulation. It is authored by Tsovinar Harutyunyan (MPH '99), Ph.D.; Aida Giloyan (MPH '07), M.S.; and Varduhi Petrosyan, M.S., Ph.D.

In November 2023, The Garo Meghriyan Institute for Preventive Ophthalmology published a new article titled “[Computer Vision Syndrome \(CVS\): the assessment of prevalence and associated risk factors among the students of the American University of Armenia](#)” in the Journal of Public Health, an international, multidisciplinary peer-reviewed journal that focuses on all aspects of the science, philosophy, and practice of public health. This study is authored by Rishba Getzie Peter (MPH '20), M.D.; Aida Giloyan (MPH '07), M.S.; Tsovinar Harutyunyan (MPH '99), Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

In November 2023, Meghriyan Institute’s project was presented at the 16th European Public Health (EPH) Conference in Ireland. The research topic “[The chronic diseases and health-related quality of life among nursing home residents in Armenia](#)” was selected as a poster presentation. This study assessed the impact of non-communicable diseases on health-related quality of life and each of the eight domains of health-related quality of life in nursing home residents in Armenia. The abstract was published in the [European Journal of Public Health](#).

In 2023 the research team of the Meghriqian Institute worked on a number of manuscripts. Some of them are in the journal submission stage, while others are in progress.

The Meghriqian Institute continued its partnership with the Lions Regional Ophthalmic Unit in Sevan, established earlier through the joint efforts of the Meghriqian Institute and the Ararat Lions Club (ALC), and funded by the Lions Club International Foundation-LCIF.

Lions Regional Ophthalmic Unit in Sevan, Gegharkunik province served around 3,325 visits, and 1,178 people and performed 628 surgeries in 2023. Meghriqian Institute conducted eye screenings among 870 people in Armenia in 2023: 161 children and 709 adults. Overall, Meghriqian Institute distributed 582 free eyeglasses and provided medication to 32 people in 2023.

Introduction

In 1999, Mr. Garo Meghriqian of Los Angeles funded a Blindness Prevention Program in Armenia in memory of his daughter, Christine Hripsime. With a generous gift from the Meghriqian family, the Garo Meghriqian Institute for Preventive Ophthalmology (Meghriqian Institute) was established within the Avedisian Onanian Center for Health Services Research and Development (CHSR) at the Turpanjian College of Health Sciences (CHS), American University of Armenia (AUA). In partnership with local experts, the Meghriqian Institute seeks to assess and characterize the burden of eye diseases in Armenia, promote preventive measures such as screenings, develop professional and public awareness through educational programs, and help increase the local health system's capacity to effectively identify and prevent vision disorders before they lead to blindness.

The main objectives of the Meghriqian Institute are to:

- Conduct scientific investigations of ophthalmic epidemiology to increase understanding of eye diseases in the community;
- Link ophthalmologic services with expertise in organizing, financing, and delivery of services to increase the utilization of ophthalmologic care in Armenia;
- Educate eye care providers and the general public on scientific advances in detecting, preventing, and treating eye disease and in translating these advances into nationwide clinical practice;
- Establish an ophthalmic care and prevention network to expand service delivery to underserved populations in need of affordable, accessible, and high-quality eye care services for the prevention and treatment of blindness at all levels;
- Develop partnerships with organizations that are interested in blindness prevention and are capable of furthering the achievements of Meghriqian Institute's goal;
- Train future professionals for blindness prevention activities in Armenia;
- Establish a regional blindness prevention network for the Caucasus, emphasizing underserved areas and minority populations.

Starting 2004, the Meghriqian Institute has also been sponsoring a fellowship program to encourage Armenian ophthalmologists to combine population-based prevention activities with clinical ophthalmology, as part of the Master of Public Health program at AUA.

Vision loss, or blindness, is a major public health problem. The leading causes of chronic blindness include cataract, glaucoma, age-related macular degeneration, and diabetic retinopathy. Blindness decreases the quality of life and has a great impact on the socioeconomic development of individuals and society. The Meghriyan Institute's activities include eye screenings and treatment for socially vulnerable children and older adults, for patients with diabetes living in Armenia and for family members of fallen soldiers living in Artsakh and Armenia; delivering educational programs to ophthalmologists, ophthalmic nurses, endocrinologists, primary health care providers, and school nurses working in rural areas of Armenia; donating ophthalmic equipment to ophthalmic offices of primary care facilities; and establishing high-quality ophthalmic services, such as the Lions Regional Ophthalmic Unit, established in Sevan, Gegharkunik province. The Meghriyan Institute founded this unit in partnership with the Ararat-1 Lions Club and with funding from the Lions Club International Foundation. The establishment of this center was the first step in expanding affordable, accessible, and high-quality ophthalmic service delivery to underserved populations, and serves as a model regional ophthalmic system in Gegharkunik province. The Unit has served around 56,562 visits, 23,908 people, and performed 7,733 surgeries for free or at a cost much lower than in Yerevan. In addition, the Meghriyan Institute has conducted eye screenings among socially disadvantaged children and adults in Armenia and displaced people from Artsakh, and ophthalmic research among different population groups, including people with glaucoma, cataract surgery, and diabetes.

This report highlights the main activities and accomplishments of the Meghriyan Institute in 2023.

Activities and accomplishments

1. AUA's Meghrigian Institute Provides Eye Care to Diabetics in Lori Province

The Garo Meghrigian Institute for Preventive Ophthalmology at the Avedisian Onanian Center for Health Services Research and Development of the Turpanjian College of Health Sciences performed eye screening to identify vision problems or other eye disorders among patients with diabetes in the Lori province of Armenia.

This long-established program was, in this round, implemented in Lori and aimed at reducing visual impairment in the target population by providing comprehensive ophthalmic examinations and distributing spectacles to those in need. Throughout the month of July 2023, the Meghrigian Institute's qualified professionals conducted eye screening in the cities of Vanadzor, Alaverdi, and Stepanavan, as well as in the villages of Tumanayan, Odzun, and Vahagni of the Lori province of Armenia. Overall, the team screened 428 people aged 24 to 89: 387 individuals with diabetes integral to the project and an additional 41 non-diabetics beyond the project priority.

Following the screening, in September 2023, the Meghrigian Institute distributed 345 spectacles to people with diabetes who were identified as having uncorrected refractive errors and unaddressed presbyopia. The team also referred individuals identified with eye diseases needing further attention to specialized ophthalmic centers for appropriate advanced care.

Apart from the screenings, the Meghrigian Institute also provided participants with informative brochures and booklets about diabetes control, potential complications, including diabetic retinopathy, and strategies for prevention.

Diabetes is a chronic condition that affects millions worldwide and worsens over time if left untreated. Diabetic retinopathy is a serious complication of diabetes and one of the leading causes of vision loss. Globally, over four million people are blind due to diabetic retinopathy, and over 103 million people have diabetic retinopathy. In Armenia, it is estimated that about 270,000 individuals, 9% of the population, are affected by diabetes. Among them, approximately 90,000 have diabetic retinopathy, and 30,000 might be challenged with vision loss if left unattended.



2. AUA's Meghrigian Institute Provides Eye Care to Forcibly Displaced People from Artsakh

The Garo Meghrigian Institute for Preventive Ophthalmology at the Avedisian Onanian Center for Health Services Research and Development of the Turpanjian College of Health Sciences performed eye screenings to identify vision problems or other eye disorders among thousands forcibly displaced from their homes in Artsakh in September 2023. The Meghrigian Institute conducted these examinations for those currently residing in the Kotayk province of Armenia, where the highest number of displaced people was registered. The program aims at reducing visual impairment and blindness by providing comprehensive ophthalmic examinations, distributing spectacles and medication to those in need, as well as arranging for referrals, if needed.

In October and November 2023, the Meghrigian Institute's qualified professionals performed eye screenings in hotels and shelters in Abovyan, Arzni, Aghveran, Tsakghkadzor, and Hankavan towns of Kotayk province. Overall, the team screened 197 people aged 50 and above. Based on the screening results, the Meghrigian Institute distributed 218 spectacles to those who were identified as having uncorrected refractive errors and unaddressed presbyopia. Moreover, 32 people who were diagnosed with eye diseases, such as cataract, glaucoma, diabetic retinopathy, maculopathy, allergic conjunctivitis, and dry eye, received medication from the Meghrigian Institute. Additionally, individuals diagnosed as having eye diseases requiring further attention were referred to specialized ophthalmic centers for appropriate advanced care.

The Meghrigian Institute's eye care program will continue to focus on screening people forcibly displaced from Artsakh, thereby reducing visual impairment in the target population through corrective measures and promoting access to high-quality ophthalmic care.



3. AUA's Meghrigian Institute Celebrates World Sight Day

On October 12, the AUA Garo Meghrigian Institute for Preventive Ophthalmology at the Avedisian Onanian Center for Health Services Research and Development of the Gerald & Patricia Turpanjian College of Health Sciences celebrated World Sight Day (WSD) 2023. This international awareness day is dedicated to focusing on eye health issues throughout the globe. This year, the WSD theme was "*Love Your Eyes at Work,*" prioritizing eye health in the workplace.

Within that framework, the Meghrigian Institute organized a workshop for the AUA community on Computer Vision Syndrome (CVS), a group of eye and vision-related problems that result from prolonged use of computers or digital devices. The Meghrigian Institute's team provided guidance on adopting preventive measures in the workplace, such as adhering to the 20-20-20 rule, practicing blinking exercises, and arranging an ergonomic workspace aimed to alleviate CVS symptoms among employees. The Meghrigian Institute also developed an information booklet to raise awareness of CVS, detailing its symptoms, risk factors, and prevention methods (Figure 1 & 2). The booklet was distributed to interested individuals.

Rishba Getzie Peter (MPH '20) conducted a capstone project to assess the prevalence of CVS and associated risk factors among 143 undergraduate students of AUA. She found that 78.3% of the students reported experiencing CVS, with common symptoms including redness, headaches, itchy eyes, and a burning sensation. The study identified several factors associated with CVS, including refractive errors, sitting posture, distance between the eyes and digital device screen, and voluntary blinking. Adhering to recommendations regarding proper sitting posture and maintaining an appropriate viewing distance when using computers or other digital devices could potentially decrease the prevalence of CVS among the target population.

In addition, the Meghrigian Institute organized an eye screening event for the AUA community, with 43 participants taking part. Of those screened, 37 were found to have refractive errors like myopia, hyperopia, astigmatism, and presbyopia. Additionally, 12 participants were diagnosed with various eye conditions, including blepharitis, dry eye disease, keratoconus, cataract, and glaucoma; 20 with uncorrected refractive errors received prescriptions for eyeglasses; and five were referred to specialized ophthalmic centers for advanced care.

CHS research assistant Adena Alahverdian (MPH '22) participated as a panel speaker in the online conference titled "International Webinar on World Sight Day," where she presented the Meghrigian project "Preserving Vision in the High-Tech World: CVS." The conference was

organized by the St. Andrews Education Foundation, St. Andrews College of Nursing, Pune, Maharashtra, Department of Medical-Surgical Nursing in association with Know the Glow (U.S.) and the Manila Central University Department of Optometry (Philippines). The webinar revolved around the main topics of diagnosis, treatment, nursing care, and prevention practices for maintaining good eye health and hosted more than 150 participants, including students of optometry, nursing, and allied health sciences.

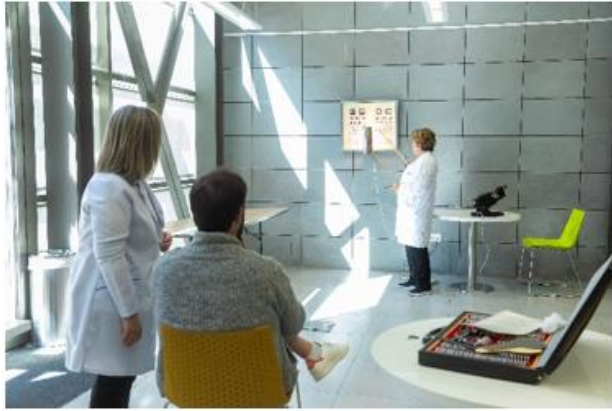


Figure 1. English version of the CVS booklet

Improper viewing distance of the screen and abnormal sitting position

- If screens are positioned either too close or too far away, it can result in uncomfortable body postures that can lead to eye fatigue.
- Extended viewing of the monitor at a close distance leads to eye strain and CVS.
- Improper sitting position while using a computer or other digital devices produces ocular discomfort and tension, which forces the eye to become more focused and causes a spasm of eye muscles resulting in CVS.
- Inappropriate sitting position can cause discomfort in the neck, back, wrists, and fingers, leading to pain (Figure 5).

HOW TO PREVENT

- *Keep your ears, shoulders and hips aligned in the vertical plane.*
- *Ensure the monitor or computer screen is positioned at your eye level, or slightly below the eye level.*
- *Ensure that your computer screen is positioned at your arm's length away (Figure 5).*



Figures 5. Correct vs incorrect sitting positions

Garo Meghriyan Institute for Preventive Ophthalmology

celebrates World Sight Day
The key theme is

"LOVE YOUR EYES AT WORK"

focusing on eye health in the workplace

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AUA TURPANJIAN COLLEGE of HEALTH SCIENCES




COMPUTER VISION SYNDROME

Garo Meghriyan Institute for Preventive Ophthalmology
Turpanjian College of Health Sciences
American University of Armenia (AUA)

WHAT IS A COMPUTER VISION SYNDROME (CVS)?

CVS is a complex of eye and vision-related symptoms experienced due to sustained use of computers, laptops, smartphones, tablets, and other digital devices.

CVS is one of the leading occupational hazards of the 21st century affecting about 90% of computer users. CVS affects sleep quality, reduces work productivity and efficiency, and can result in poor quality of life and depression.

SYMPTOMS OF CVS

- Double vision, blurred vision, and trouble focusing the eye
- Eye irritation (dry eyes, itchy eyes, red eyes)
- Eye strain, tired eyes, glare sensitivity, and sore and burning eyes
- Headache, neck and shoulder pain.

RISK FACTORS OF CVS

Insufficient or incorrect screen lighting

Improper light on the screen or inappropriate screen brightness can lead to eye strain, poor posture, headache, and low productivity (Figure 1 & 2).



Figures 1 & 2. Improper lighting of computer screen

HOW TO PREVENT

- Avoid extreme display brightness settings, both too high and too low.
- Protect the screen from intense light sources, whether it is direct sunlight causing shadows or indoor lighting conditions.
- Adjust the brightness and contrast (the combination of maximum and minimum illumination) of computer or other digital devices.
- Use anti-glare screens and computer glasses.

Prolonged concentration on the screen

Prolonged concentration on the screen can restrict the movement of the eye muscles, leading to CVS.

HOW TO PREVENT

- Follow the 20-20-20 rule, which alleviates eyestrain and mitigates CVS (Figure 3).

The 20-20-20 Rule



Figure 3. The 20-20-20 rule

Blinking rate reduction

- Usually, people blink 15 times per minute.
- When using a computer, the frequency of blinking drops to 5 times per minute because of the continuous staring at the screen.
- Without sufficient blinking, the eyes become dehydrated and irritated, leading to CVS.

HOW TO PREVENT

- *Increase your blinking frequency while using computer or other digital devices.*
- *Do blinking exercises every 20 minutes, 20 times a day (see instruction in Figure 4).*



Figure 4. Blinking exercise instruction

Figure 2. Armenian version of the CVS booklet

Համակարգչի առջև նստելու ոչ ճիշտ դիրքն ու հետավորությունը

- Եթե էկրանը տեղադրված է աչքերին շատ մոտ կամ շատ հեռու, դա կարող է բերել մարմնի անհարմար կեցվածքի և առաջացնել աչքերի հոգնածություն:
- Էկրանին երկարատև նայելը մոտ հեռավորությունից առաջացնում է աչքերի լարվածություն և ՀՏՀ:
- Համակարգչի կամ այլ թվային սարքերի օգտագործման ժամանակ ոչ ճիշտ նստելու դիրքը ստիպում է լարել տեսողությունը՝ առաջացնելով անհարմարության զգացողություն աչքերում և աչքի մկանների լարվածություն, որի արդյուրում գարգանում է ՀՏՀ:
- Նստելու ոչ ճիշտ դիրքը կարող է անհանգստություն և ցավ առաջացնել պարանոցի, մեջքի, դաստակների և մատերի շրջանում (Նկար 5):

ԻնՉՊԵՄ ԿԱՆԻՒԷԼ

- Համակարգչի առջև նստելիս ականջները, ուսերը և կոնքերը պահեք ուղղահայաց դիրքում:
- Համոզվեք, որ համակարգչի էկրանը տեղադրված է աչքերի մակարդակին կամ աչքերի մակարդակից մի փոքր ցածր:
- Համոզվեք, որ համակարգչի էկրանը գտնվում է նույն հեռավորության վրա, որքան Ձեր ձեռքի երկարությունն է (Նկար 5):

Նկար 5. Նստելու ճիշտ և սխալ դիրքերը

Կարո Մեդրիկեանի անվան աչքի հիվանդությունների կանխարգելման կենտրոնը հոկտեմբերին նշում է տեսողության համաշխարհային օրը

Այս տարի այն նվիրված է աչքի առողջությանը աշխատավայրում և կրում է

«ՄԻՐԵՔ ՁԵՐ ԱՋՔԵՐԻ ԱՇԽԱՏԱՆՔԻ ՎԱՅՐՈՒՄ»

կարգախոսը

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ՀԱՄԱԿԱՐԳՉԱՅԻՆ ՏԵՍՈՂԱԿԱՆ ՀԱՄԱԽՏԱՆԻՇ

Կարո Մեդրիկեանի անվան աչքի հիվանդությունների կանխարգելման կենտրոն

Թրվանճեան առողջապահական գիտությունների ֆակուլտետ
Հայաստանի ամերիկյան համալսարան

ԻՆՉ Ե ՀԱՄԱԿԱՐԳՉԱՅԻՆ ՏԵՍՈՂԱԿԱՆ ՀԱՄԱԽՏԱՆԻՇԸ (ՀՏՀ)

ՀՏՀ-ն աչքի և տեսողության հետ կապված ախտանշանների խումբ է, որն առաջանում է համակարգիչի, խոթույթների, սմարթֆոնների, պլանշետների և այլ թվային սարքերի օգտագործման հետևանքով:

ՀՏՀ-ն 21-րդ դարի տարածված առողջական խնդիրներից մեկն է, որն առաջանում է համակարգիչ օգտագործողների մոտ 90%-ի մոտ: ՀՏՀ-ն կարող է բացասաբար ազդել կյանքի որակի վրա, նվազեցնել աշխատանքի արդյունավետությունը, առաջացնել անքնություն, անհանգստություն և ընկճախտ (դեպրեսիա):

ՀՏՀ-Ի ԱՄՏԱՆՇԱՆՆԵՐԸ

- Երկտեսություն, մշուշոտ տեսողություն, ինչպես նաև աչքի կենտրոնացման խանգարում
- Չոր աչքեր, աչքերի քոր կամ կարմիր աչքեր
- Աչքերի լարվածություն, հոգնածություն, լույսի նկատմամբ զգալիության բարձրացում, ցավի և այրիքի զգացողություն աչքերում
- Գլխացավ, ցավ՝ պարանոցի և ուսերի շրջանում:

ՀՏՀ-Ի ՌԻՍԿԻ ԳՈՐԾՈՒՆԵՐԸ

Էկրանի անբավարար կամ ոչ ճիշտ լուսավորություն

Էկրանի ոչ պատշաճ լուսավորությունը կարող է առաջացնել աչքերի լարվածություն, գլխացավ, նպաստել ոչ ճիշտ կեցվածքին և աշխատանքի ցածր արդյունավետությանը (Նկարներ 1 և 2):

Նկարներ 1 և 2. Համակարգչի էկրանի ոչ պատշաճ լուսավորում

ԻնՉՊԵՄ ԿԱՆԻՒԷԼ

- Խուսափե՛ք էկրանի չափազանց բարձր կամ ցածր լուսավորությունից
- Պաշտպանե՛ք էկրանը ինտենսիվ լույսի աղբյուրներից, որոնք են ստվերներ առաջացնող արևի ուղիղ ճառագայթները կամ սենյակի լուսավորության պայմանները:
- Կարգավորեք համակարգչի կամ այլ թվային սարքերի լուսավորությունն ու կոնտրաստը (ատավելագույն և նվազագույն լուսավորության համարողությունը):
- Օգտագործեք հակափայլ էկրաններ և համակարգչի համար նախատեսված ակնոց:

Երկարատև կենտրոնացում էկրանին

Երկարատև կենտրոնացումը համակարգչի կամ այլ թվային սարքերի էկրանին կարող է սահմանափակել աչքի մկանների շարժումները՝ առաջացնելով ՀՏՀ:

ԻնՉՊԵՄ ԿԱՆԻՒԷԼ

- Հետևեք 20-20-20-ի կանոնին, որը նվազեցնում է աչքերի լարվածությունը թվային էկրաններին երկար նայելու հետևանքով և մեղմացնում ՀՏՀ համախտանիշը (Նկար 3):

Նկար 3. 20-20-20-ի կանոնը

Աչքերը թարթելու հաճախականության նվազեցում

- Սովորաբար մարդկի թարթում են իրենց աչքերը 15 անգամ 1 րոպեում:
- Սակայն համակարգիչ կամ այլ թվային սարքերից օգտվելու ժամանակ աչքերը թարթելու հաճախականությունը նվազում է մինչև 5 անգամ մեկ րոպեում՝ էկրանին անթարթ նայելու պատճառով:
- Եթե բավարար հաճախականությամբ չթարթեք, աչքերը կարող են ջրազրկվել և գրգռվել՝ առաջացնելով ՀՏՀ:

ԻնՉՊԵՄ ԿԱՆԻՒԷԼ

- Համակարգիչ կամ այլ թվային սարքեր օգտագործելիս հաճախ թարթե՛ք աչքերը:
- Կատարե՛ք աչքերը թարթելու վարժություն յուրաքանչյուր 20 րոպեին մեկ անգամ, օրական 20 անգամ՝ աչքերի մկանային հիշողությունը բարելավելու համար (Նկար 4):

Նկար 4. Ցուցումներ՝ աչքերը թարթելու վարժության վերաբերյալ

4. Meghriyan Institute Provides Eye Care to Socially Disadvantaged Children

In November 2023, the Garo Meghriyan Institute for Preventive Ophthalmology of the American University of Armenia Turpanjian College of Health Sciences, with assistance from the Republic of Armenia Ministry of Labor and Social Affairs, launched an eye screening program for socially vulnerable children. The initiative aimed to decrease visual impairment among the target population through the provision of comprehensive ophthalmic examination and the distribution of eyeglasses to those in need.

The staff of the Meghriyan Institute visited the Ajapnyak Children’s Social Care Center and Zatik Child Assistance Center in Yerevan, both of which serve socially vulnerable and orphaned children. Overall, 161 out of 170 children participated in the detailed eye screenings.

In January 2024, the Meghriyan Institute distributed 19 eyeglasses to children who were diagnosed with refractive errors such as myopia, hyperopia, and astigmatism. Children diagnosed with eye diseases including infectious and allergic conjunctivitis, blepharitis, keratitis (keratopathy), retinopathy, and accommodation spasm received a prescription by the Meghriyan Institute’s qualified ophthalmologist. Those who had other eye conditions needing hospital care were referred to specialized centers for more detailed examinations.

Uncorrected refractive error is the most common cause of visual impairment in children. According to the World Health Organization, approximately 19 million children and adolescents are visually impaired worldwide, among which approximately 12.8 million cases (67%) are due to uncorrected refractive error. Providing appropriate refractive correction to children experiencing unaddressed refractive errors will reduce visual impairment among children and improve their overall well-being.

“Uncorrected refractive error can lead to amblyopia, limit or slow academic progress, diminish social interaction, and impair quality of life. Refractive errors can be easily diagnosed, measured, and corrected,” explained Aida Giloyan, senior researcher at the Meghriyan Institute.



5. AUA's Meghriyan Institute Publishes in the Journal of Ophthalmic Epidemiology



The Garo Meghriyan Institute for Preventive Ophthalmology at the Avedisian Onanian Center for Health Services Research and Development of the Gerald & Patricia Turpanjian College of Health Sciences of the American University of Armenia published a new article titled [“Nationwide Rapid](#)

[Assessment of Avoidable Blindness \(RAAB\) in Armenia”](#) in the *Journal of Ophthalmic*

Epidemiology, an international, highly regarded peer-reviewed journal that focuses on eye and vision health in the fields of epidemiology, public health, and the prevention of blindness. The study was authored by Naira Khachatryan (MPH '97), M.D, DrPH; Aida Giloyan (MPH '07), M.S.; Ala Paduca, M.D.; Hans Limburg, M.D., Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

The article is based on an unprecedented study in Armenia that estimates the national prevalence and main causes of blindness and visual impairment in the population aged 50 years and older, using the Rapid Assessment of Avoidable Blindness (RAAB) methodology developed at the International Center for Eye Health, London School of Hygiene & Tropical Medicine. This methodology was first developed by Dr. Hans Limburg, more than twenty years ago and has since been used in over 80 countries worldwide. It provides important data for use by health policy professionals and decision makers in developing appropriate interventions that would improve eye health throughout the country.

The nationwide Armenia RAAB covered all ten marzes and Yerevan, with a sample size of 2,258 participants. The estimated prevalence of bilateral blindness, severe and moderate visual impairment were 1.5%, 1.6%, and 6.6%, respectively. The main causes of blindness included cataract (43.9%) and glaucoma (17.1%). The prevalence of bilateral blindness and functional low vision increased with age and was the highest in participants 80 years and older. The rate of bilateral blindness was comparable with findings from countries with similar conditions confirming that untreated cataract was the main cause of blindness in Armenia. Cataract related blindness is avoidable, suggesting that strategies could be developed to further increase the volume and quality of cataract surgical care to appropriately address this important public health problem in Armenia.

The Meghriyan Institute conducted the nationwide RAAB survey with funding from the Lions Club International Foundation (LCIF).

6. AUA's Meghriyan Institute Publishes in the Journal of Disability and Rehabilitation



Garo Meghriyan Institute for Preventive Ophthalmology (Meghriyan Institute) at the Avedisian Onanian Center for Health Services Research and Development of the Gerald & Patricia Turpanjian College of Health Sciences, published a new article

titled “[Factors associated with health-related quality of life among people with visual impairments living in nursing homes in Armenia: a cross-sectional study.](#)” The research article appeared in the Journal of Disability and Rehabilitation, an international, highly regarded peer-reviewed journal that provides a platform for sharing and exchange of ideas among global health practitioners and researchers in an effort to encourage a better understanding of disability and promote rehabilitation science, practice, and policy.

The study was authored by Aida Giloyan (MPH '07), M.S.; Tsovinar Harutyunyan (MPH '99), Ph.D.; Ani Babayan M.D.; and Varduhi Petrosyan, M.S., Ph.D. The research examines the effect of visual impairment, eye diseases, and other factors on health-related quality of life in nursing home (տոմս ինտերնատ) residents in Armenia.

The prevalence of normal vision was recorded at 55.3%, while visual impairment and blindness were prevalent in 40.8% and 3.9%, respectively. Uncorrected refractive error was found in 20% of participants. The mean health-related quality of life score was 51.3, varying from 7.9 to 95.0. Factors such as having at least one chronic non-communicable disease, experiencing sleep disorders, having eye diseases, uncorrected refractive error, visual impairment, and blindness were associated with poor health-related quality of life, as contrasted with instrumental social support being associated with better health-related quality of life in the target population.

The study underscores the potential advantage of providing regular eye care services to improve eye health and overall quality of life among nursing home residents. By addressing the challenges of vision loss and chronic non-communicable diseases, interventions have the capacity to enhance the functional status and well-being of the target population.

7. AUA's Meghriyan Institute Publishes on Cataract Blindness in Armenia



The American University of Armenia Garo Meghriyan Institute for Preventive Ophthalmology (Meghriyan Institute) at the Avedisian Onanian Center for Health Services Research and Development of the Gerald & Patricia Turpanjian College of Health Sciences, published a new article titled “[Cataract Blindness in Armenia: The Results of Nationwide Rapid Assessment of Avoidable Blindness \(RAAB\)](#).” The research article appeared in the Journal of Ophthalmic Epidemiology, an international peer-reviewed journal that focuses on eye and vision health in the fields of epidemiology, public health, and the prevention of blindness. The study was authored by Aida Giloyan (MPH '07), M.S.; Naira Khachatryan (MPH '97), M.D, DrPH; Ala Paduca, M.D.; Hans Limburg, M.D., Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

This is the second paper written based on the nationwide Rapid Assessment of Avoidable Blindness. The article focuses on assessing the prevalence of cataract blindness, the coverage for cataract surgery and its effectiveness, the post-surgery visual outcome, and barriers to cataract surgery among individuals aged 50 years and older in Armenia.

The study utilized the RAAB methodology, developed by Dr. Limburg at the International Center for Eye Health, London School of Hygiene & Tropical Medicine. Since its inception, this methodology has been used in over 300 surveys in more than 80 countries. It offers valuable insights for healthcare policymakers and decision-makers, aiding them in formulating targeted interventions to enhance overall eye health nationwide. According to the Global Burden of Disease study, cataract was the first leading cause of blindness among 15.2 million cases and the second leading cause of moderate and severe visual impairment among 78.8 million cases globally of people aged 50 years and older in 2020.

This study by the AUA Meghriyan Institute included 2,258 individuals aged 50 years and older randomly selected from 11 provinces of Armenia in 2019. The prevalence of blindness caused by any reason was 1.5%, of which 36.4% had bilateral blindness due to cataract. The coverage for cataract surgery and its effectiveness, measured against a surgical threshold of vision $<6/12$, was 55.1% and 24.4%, respectively. After cataract surgery, a good outcome was observed in 43.7% of eyes, a borderline outcome in 37.2%, and a poor outcome in 19.1%, falling short of the World Health Organization's recommendation. The main barriers to cataract surgery were cost, need not felt, or fear of surgery.

The prevalence of cataract blindness in our study was higher compared to high-income countries. The findings suggest the urgent need to update the National Strategic Plan to prevent blindness in Armenia, particularly focusing on improving the quality and coverage of cataract surgery.

The AUA Meghriyan Institute conducted the nationwide RAAB survey with financial support from the Lions Club International Foundation (LCIF).

8. AUA's Meghriyan Institute Publishes in the Journal of Healthcare



The Garo Meghriyan Institute for Preventive Ophthalmology at the Avedisian Onanian Center for Health Services Research and Development of the Gerald & Patricia Turpanjian College of Health Sciences published a new study titled "[Health-Related Quality of Life after Cataract Surgery in Armenia: A Cross-Sectional Survey](#)." The research article appeared in the Journal of Healthcare, an international, scientific, [peer-reviewed](#), open-access journal on healthcare systems, industry, technology, policy, and regulation. It is authored by Tsovinar Harutyunyan (MPH '99), Ph.D.; Aida Giloyan (MPH '07), M.S.; and Varduhi Petrosyan, M.S., Ph.D.

The study assessed the visual outcomes and explored health-related quality of life along with associated factors following cataract surgery in Armenia. Approximately 72.8% of the eyes examined had good visual outcomes, 17.7% had borderline outcomes, and 9.5% had poor visual outcomes. The mean health-related quality of life score for physical health was 50.8 over 100,

while the mean health-related quality of life score for mental health was 49.9 over 100. A higher health-related quality of life score signifies a better health-related quality of life.

Gender, socioeconomic status, presence of non-communicable disease, and giving and receiving tangible social support were significantly linked to the physical component of health-related quality of life. Giving social support was associated with a higher health-related quality of life score. The factors significantly associated with the mental component included socioeconomic status, having a non-communicable disease, and giving tangible social support. Within the context of this study, social support encompasses offering assistance or comfort to others to help them cope with various challenges. Giving social support stands out as one of the most crucial positive contributors to health-related quality of life, particularly for individuals with visual impairments who may experience feelings of isolation from society and a decline in social status.

The visual outcomes post-cataract surgery in the sampled patients fall below the recommended World Health Organization norms, highlighting the need for quality ophthalmological surgical care. The findings indicate the importance of monitoring visual outcomes, particularly in women, patients with poor socioeconomic status, and those who have non-communicable diseases.

9. AUA's Meghriyan Institute Publishes in the Journal of Public Health



The Meghriyan Institute at the Avedisian Onanian Center for Health Services Research and Development of the Turpanjian College of Health Sciences of the American University of Armenia published a new article titled [“Computer Vision](#)

[Syndrome \(CVS\): the assessment of prevalence and associated risk factors among the students of the American University of Armenia”](#) in the Journal of Public Health, an international, multidisciplinary peer-reviewed journal that focuses on all aspects of the science, philosophy, and practice of public health. The Journal ranks in the top quarter within the subject area and includes contributions from epidemiology, health economics, environmental health, management, social sciences, ethics, and law. This study is authored by Rishba Getzie Peter (MPH '20), M.D.; Aida Giloyan (MPH '07), M.S.; Tsovinar Harutyunyan (MPH '99), Ph.D.; and Varduhi Petrosyan, M.S., Ph.D.

Dr. Peter proposed a capstone to assess the prevalence of CVS and the associated risk factors among undergraduate students of AUA in her [master thesis project](#). The Meghriyan Institute found this proposal interesting and worked with her to implement it as part of the Institute's projects. In that regard, an online survey was conducted among 143 students aged 18 years and above in June 2021. Overall, 78.3% of the students reported experiencing CVS, with common symptoms including eye redness (74.6%), headaches (72.5%), itchy eyes (71.2%), burning sensation (70.5%), tearing eyes (66.7%), and blurred vision (63.4%). The research revealed that daily computer usage had doubled from 5.5 hours to 10.0 hours during the SARS-CoV-2 pandemic. The study identified several factors associated with CVS, including the presence of refractive errors, sitting posture, distance between the eyes and digital device screen, and voluntary blinking. The findings showed a high prevalence of CVS in the study population. Adhering to recommendations regarding proper sitting posture and maintaining an appropriate viewing distance when using computers or other digital devices could potentially decrease the prevalence of CVS in the target population.

CVS is one of the leading occupational hazards of the 21st century, affecting the majority of computer users. With the use of computers, laptops, tablets, and other digital devices becoming increasingly common among students in educational institutions, the prevalence of computer vision syndrome ranges from 50.8% to 98.7% among undergraduate students globally.

To address the issues identified in the study, the Meghriyan Institute organized the World Sight Day (WSD) 2023 celebration with a focus on "[Love Your Eyes at Work](#)" at AUA and provided guidance on adopting preventive measures, such as adhering to the 20-20-20 rule, practicing blinking exercises, and arranging an ergonomic workspace aimed to alleviate CVS symptoms among AUA students, faculty, and staff.

10. Meghriyan Institute's project was presented at the 16th European Public Health (EPH) Conference in Ireland



Research Associate Diana Muradyan (MPH '20) of the Garo Meghriyan Institute for Preventive Ophthalmology in the Zvart Avedisian Onanian Center for Health Services Research and

Development of the American University of Armenia, was selected to be one of the presenters at the 16th European Public Health Conference 2023 held on November 8-11. With more than

2,400 delegates from 85 countries in attendance, the conference attracted public health professionals from around the world to exchange ideas and discuss the latest scientific insights on public health topics under the theme “Our Food, Our Health, Our Earth: A Sustainable Future for Humanity.”

The research topic “[The chronic diseases and health-related quality of life among nursing home residents in Armenia](#)” was selected as a poster presentation. This study assessed the impact of non-communicable diseases (and each of them) on health-related quality of life and each of the eight domains of health-related quality of life in nursing home residents in Armenia. It found that stroke and bone/joint diseases have the broadest impact on health-related quality of life domains. Having two or more non-communicable diseases significantly decreased health-related quality of life in all domains, particularly affecting pain, role limitation due to physical health, and physical functioning. Strategies should be developed for the adequate management of non-communicable diseases. Those with multiple non-communicable diseases should be priority targets for such interventions.

The abstract was published in the [European Journal of Public Health](#), Volume 33, Issue Supplement 2, October 2023.

Muradyan D, Giloyan A, Harutyunyan T, Petrosyan V. The chronic diseases and health-related quality of life among nursing home residents in Armenia. European Journal of Public Health, Volume 33, Issue Supplement_2, October 2023, ckad160.1129, <https://doi.org/10.1093/eurpub/ckad160.1129>

11. Meghrigian Institute worked on manuscripts

In 2023 the research team of the Meghrigian Institute worked on a number of manuscripts. Some of them are in the journal submission stage, while others are in progress.

- **Manuscript 1:** *Risk factors associated with visual impairment among people aged 50 years and older in Gegharkunik province of Armenia: Rapid Assessment of Avoidable Blindness Survey.* This study assessed the association of smoking, alcohol consumption, physical activity, and several socio-demographic and health status-related factors with visual

impairment among 50-year-old and older adults in the Gegharkunik province of Armenia. This manuscript was in the journal submission stage.

- **Manuscript 2:** *The prevalence and associated risk factors of age-related cataract among people aged 50 years and older in Gegharkunik province of Armenia.* This study assessed the prevalence of age-related cataract and associated risk factors among the population aged 50 years and older in Gegharkunik province of Armenia using the Rapid Assessment of Avoidable Blindness (RAAB) methodology. This manuscript was in the journal submission stage.
- **Manuscript 3:** *Migraine Headache and other risk factors associated with Glaucoma among the adult population living in Armenia: a case-control study.* This study aimed to assess the association between migraine headache and high-tension and normal-tension glaucoma among the adult population living in Armenia. This manuscript was in the journal submission stage.
- **Manuscript 4:** *The Impact of Refractive error correction on Health-related Quality of Life in nursing home residents in Armenia.* This study assessed the impact of refractive error correction with spectacles on health-related quality of life through baseline and follow-up comparison. This manuscript was in progress.
- **Manuscript 5:** *The impact of chronic non-communicable diseases on health-related quality of life in nursing home residents in Armenia.* This study assessed the impact of non-communicable disease and other factors on health-related quality of life in nursing home residents in Armenia. This manuscript was in progress.
- **Manuscript 6:** *Cataract Blindness in Armenia: The Results of Nationwide Rapid Assessment of Avoidable Blindness (RAAB).* This study assessed the prevalence of cataract blindness, cataract surgical coverage (CSC), effective CSC, visual outcome after cataract surgery, and barriers to cataract surgery in a population aged 50 years and older in Armenia using Rapid Assessment of Avoidable Blindness (RAAB) methodology. This manuscript was in the journal submission stage.

12. Meghriyan Institute: 2023 in numbers

Lions Regional Ophthalmic Unit in Sevan, Gegharkunik province served around 3,325 visits, and 1,178 people and performed 628 surgeries in 2023. Meghriyan Institute conducted eye screenings among 870 people in Armenia in 2023: 161 children and 709 adults. Overall,

Meghrigian Institute distributed 582 free eyeglasses and provided medication to 32 people in 2023.