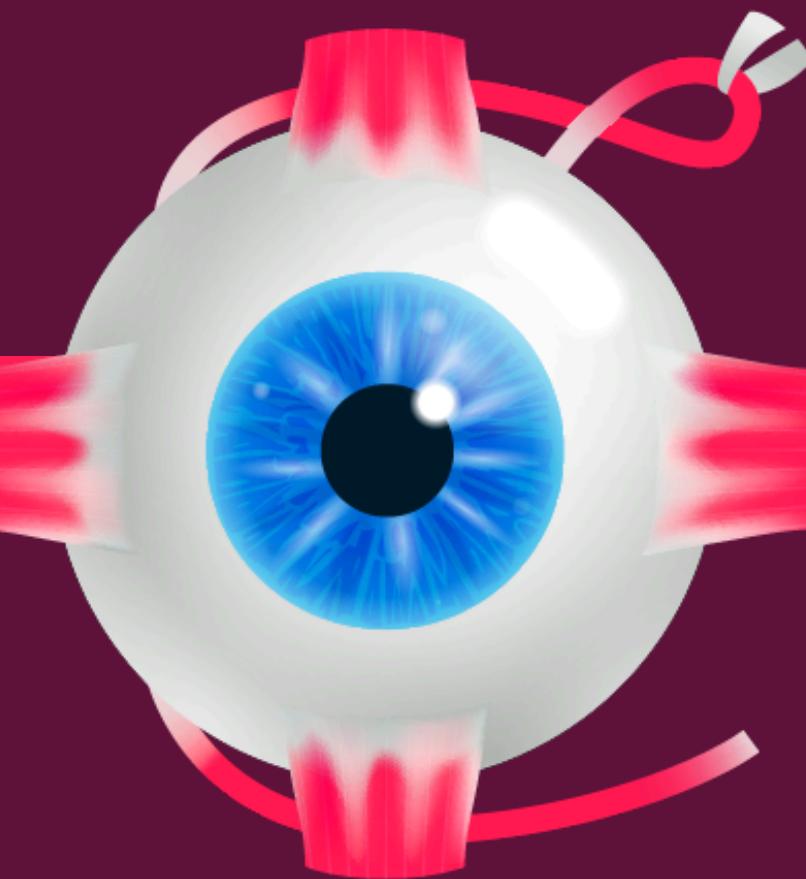


Systemic Diseases and the Eye

A Demographic Analysis on the Ocular Effects of Diabetes, Hypertension, and Cardiovascular Disease

Let's start...



KEY TOPICS COVERED

How age affects diabetes, hypertension, and cardiovascular disease.

How these systemic diseases affect eye parameters (IOP, VA, Drusen Size ,AMD etc).

To compare disease prevalence by Age and Gender..

Table of contents

Systemic
Diseases
Affects
Eyes

Glossary

Symptoms

Section A
ARMD

Section B
Visual
Acuity

Section C
Intraocular
Pressure

Precautions

Conclusion

SYSTEMIC DISEASES AFFECTS EYES

Cardiovascular Disease

- Ischemic Optic Neuropathy.
- Causes BRVO , BRAO



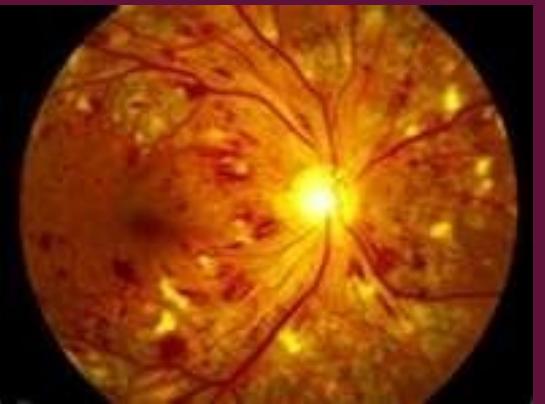
Diabetes:

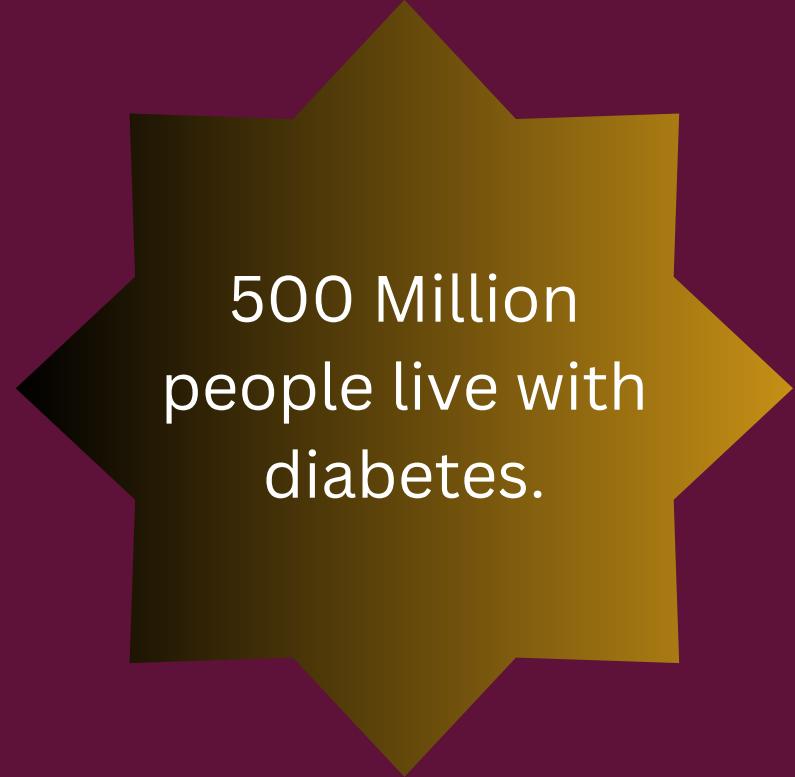
- Diabetic retinopathy.
- Macular edema.



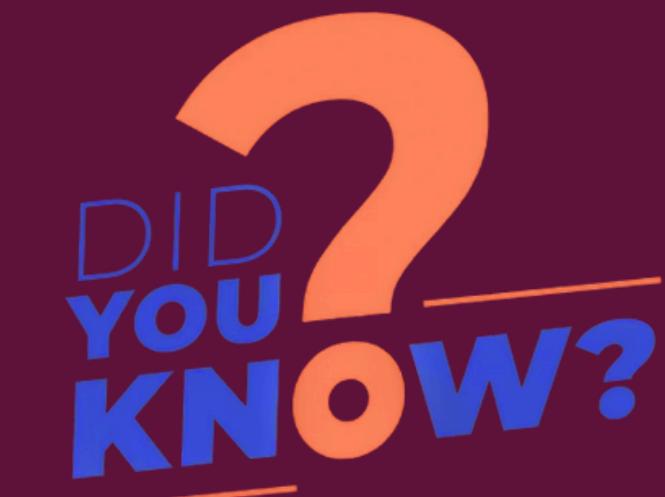
Hypertension:

- Hypertensive retinopathy.

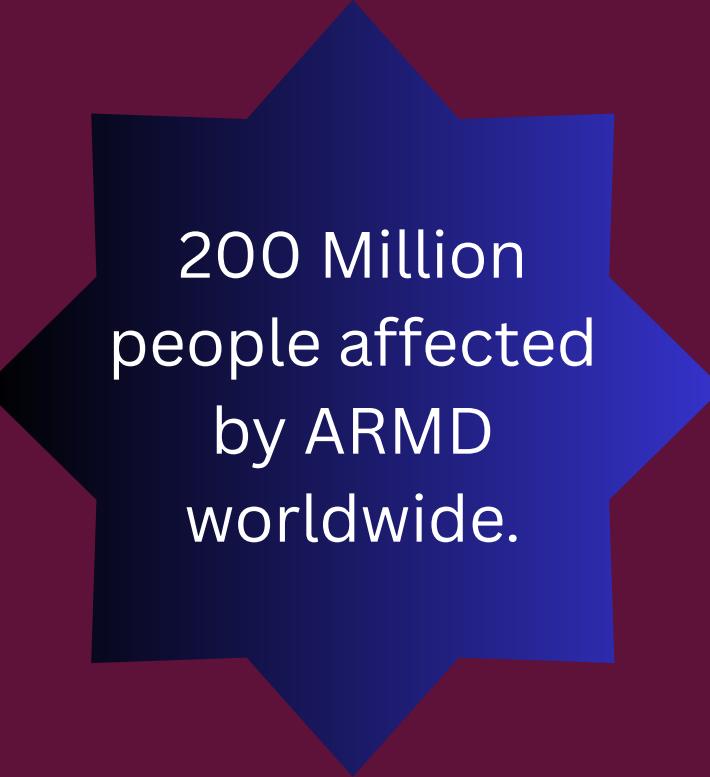




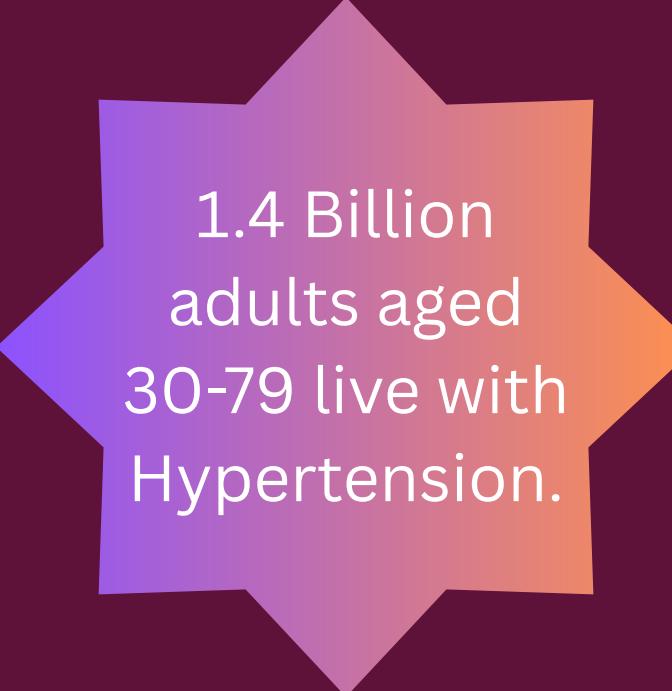
500 Million
people live with
diabetes.



DID YOU KNOW?



200 Million
people affected
by ARMD
worldwide.

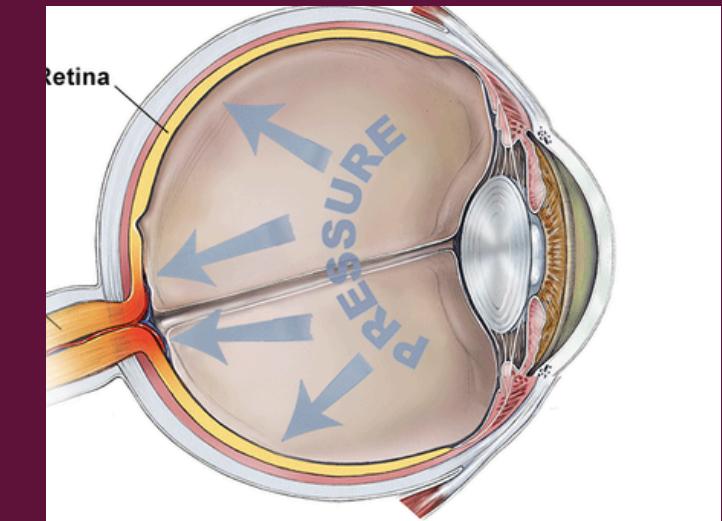


1.4 Billion
adults aged
30-79 live with
Hypertension.

GLOSSARY

INTRAOCULAR PRESSURE

IOP refers to the pressure inside the Eye.



AGE RELATED MACULAR DEGENERATION

Degenerative process affecting the macula of the retina.



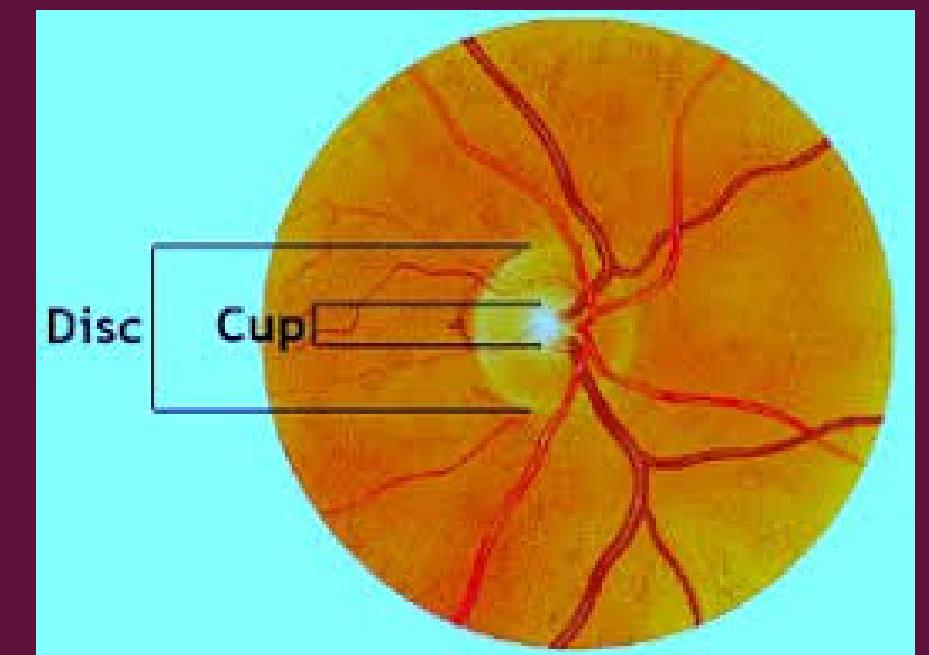
VISUAL ACUITY

VA is a measure of the sharpness and clarity of your vision.



CUP TO DISC RATIO

Diameter of the optic cup (the central depression of the optic nerve head) to the total diameter of the optic disc (the entire nerve head)



SYMPTOMS



EYE DEGENERATIVE DISEASE

Age Related Macular
Degeneration



SYSTEMIC DISEASES

CVS
Diabetes
Hypertension

Hypertension



Fatigue



Headache



Nose Bleed



Chest Pain

Diabetes



Increased Thirst



Dizziness



Hunger

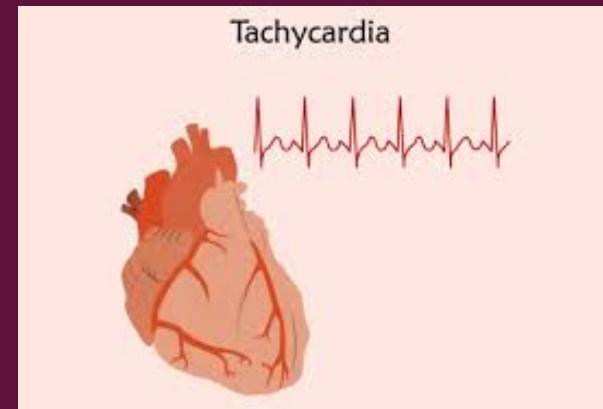


Tingling Sensation



Weight Gain

Cardio Diseases



Tachycardia



Tiredness



Swollen Feet



Shoulder Pain

ARMD

- Distorted central vision
- Blurry Vision
- Dark or Blank spots
- Faded colors
- Drusens



DATA DESCRIPTION

DATASET

**NUMBER OF
PARTICIPANTS**

The dataset from Kaggle includes information on diabetes, hypertension, and CVD ocular parameters. It is used to analyze how age and gender affect disease prevalence and their impact on eye health.

Dataset includes 72,000+

VARIABLES

Following are the variables to be discussed:

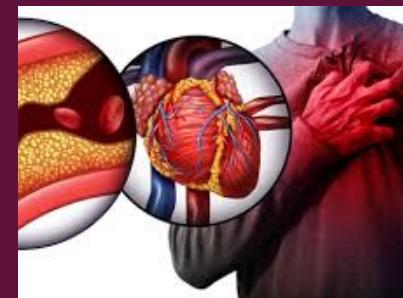
Insights



Age



Gender



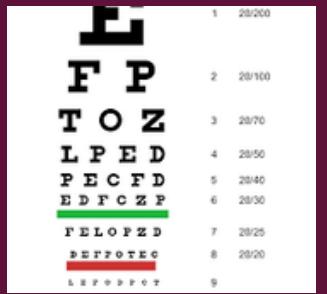
CVD



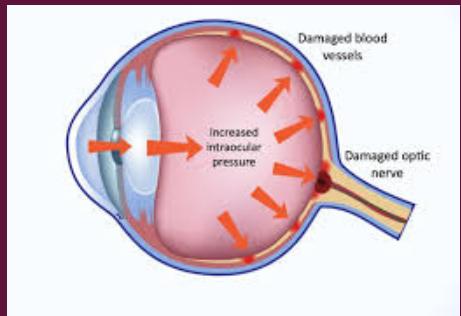
Diabetes



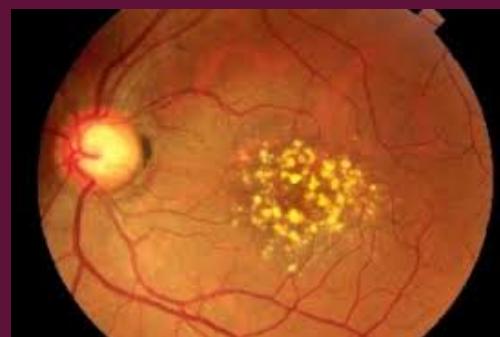
Hypertension



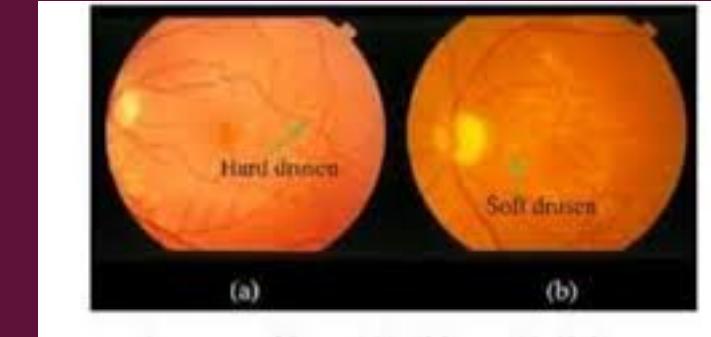
VA



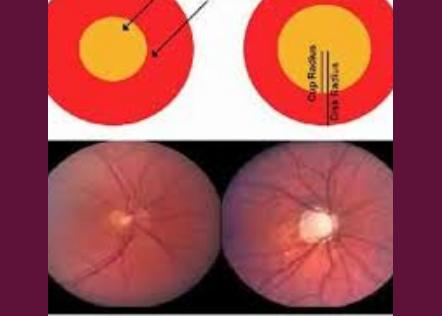
IOP



ARMD



Drusen Type



CDR



SECTION

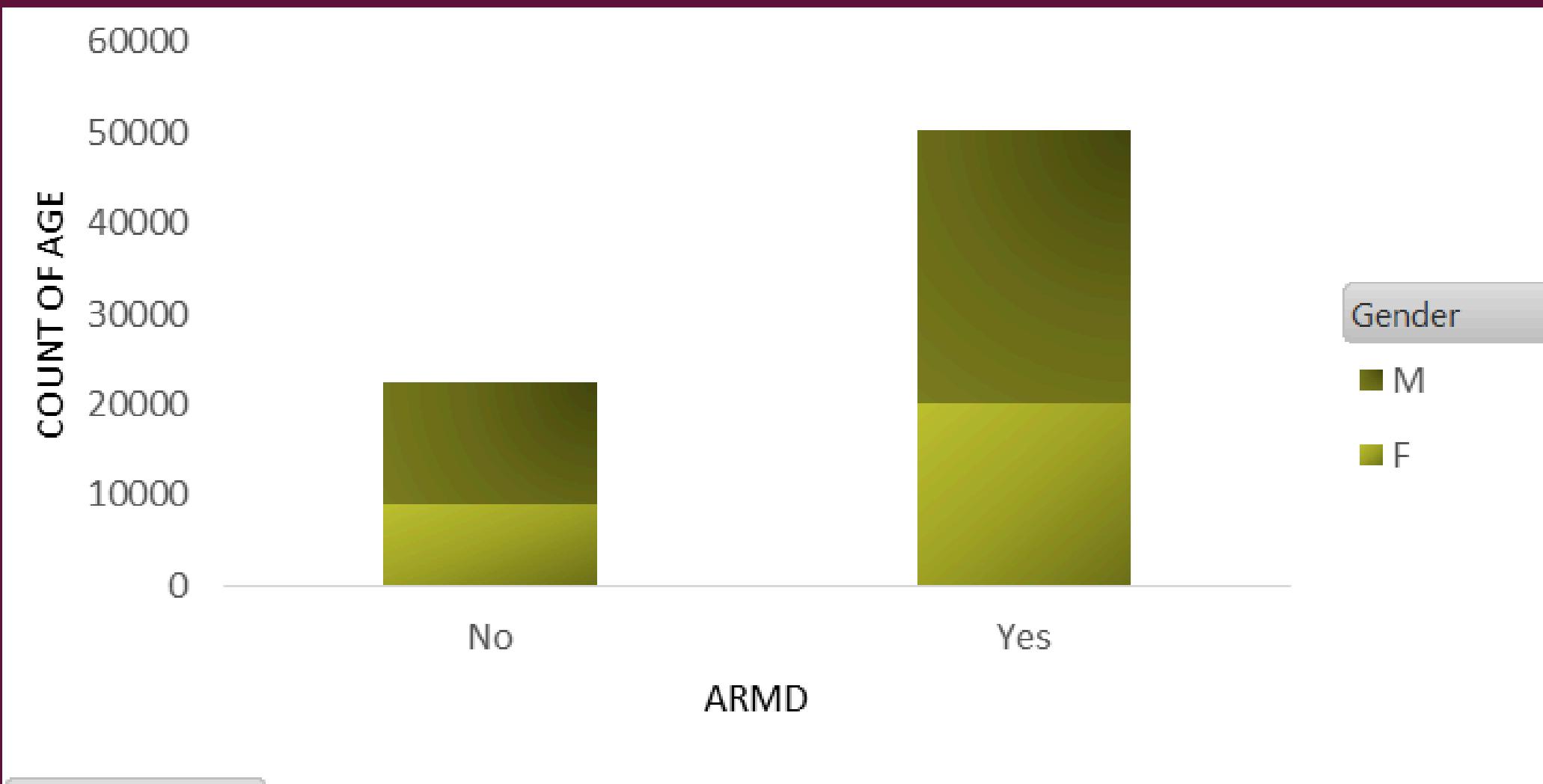


AGE RELATED MACULAR DEGENERATION

ARMD

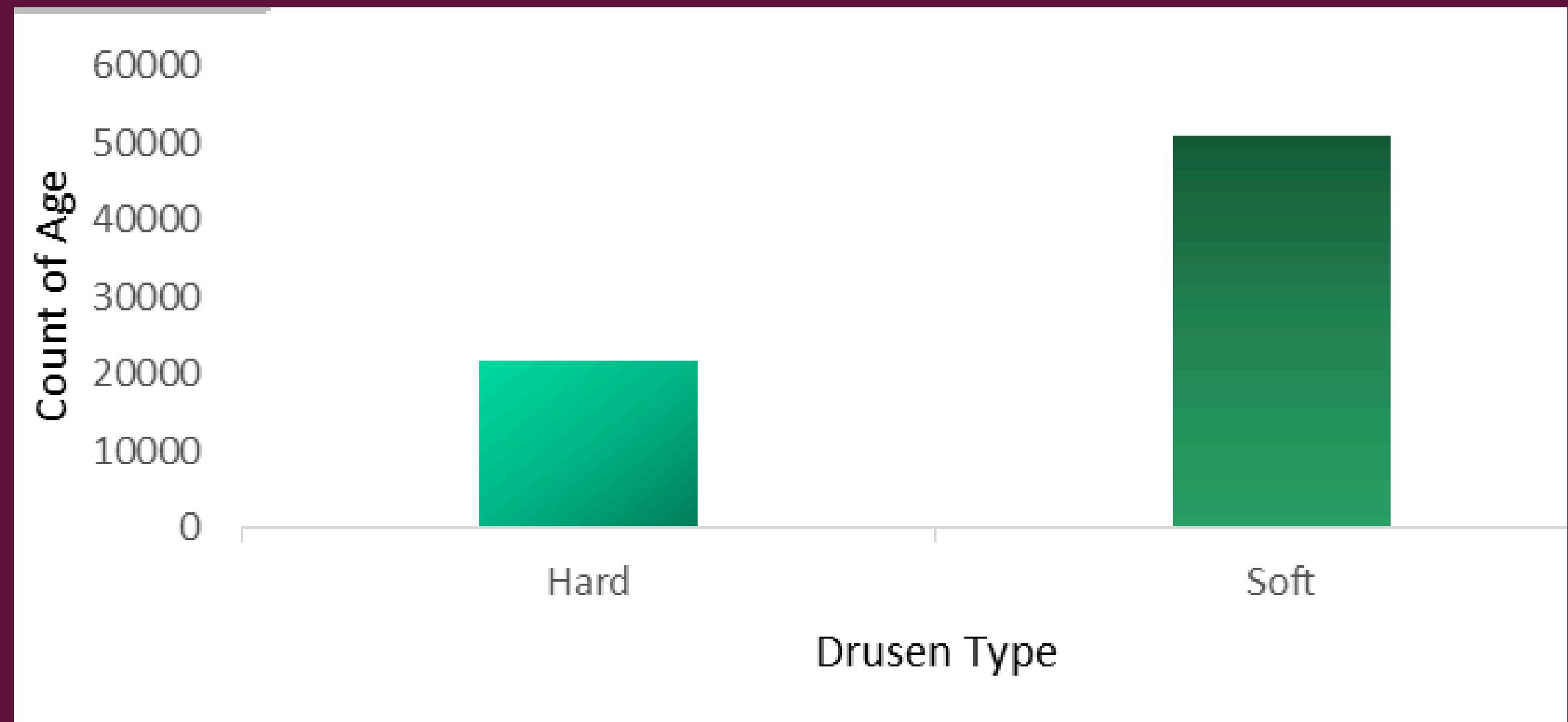
ARMD PREVALANCE BY AGE AND GENDER

- ARMD prevalence increases with age.
- Higher risk observed in males.

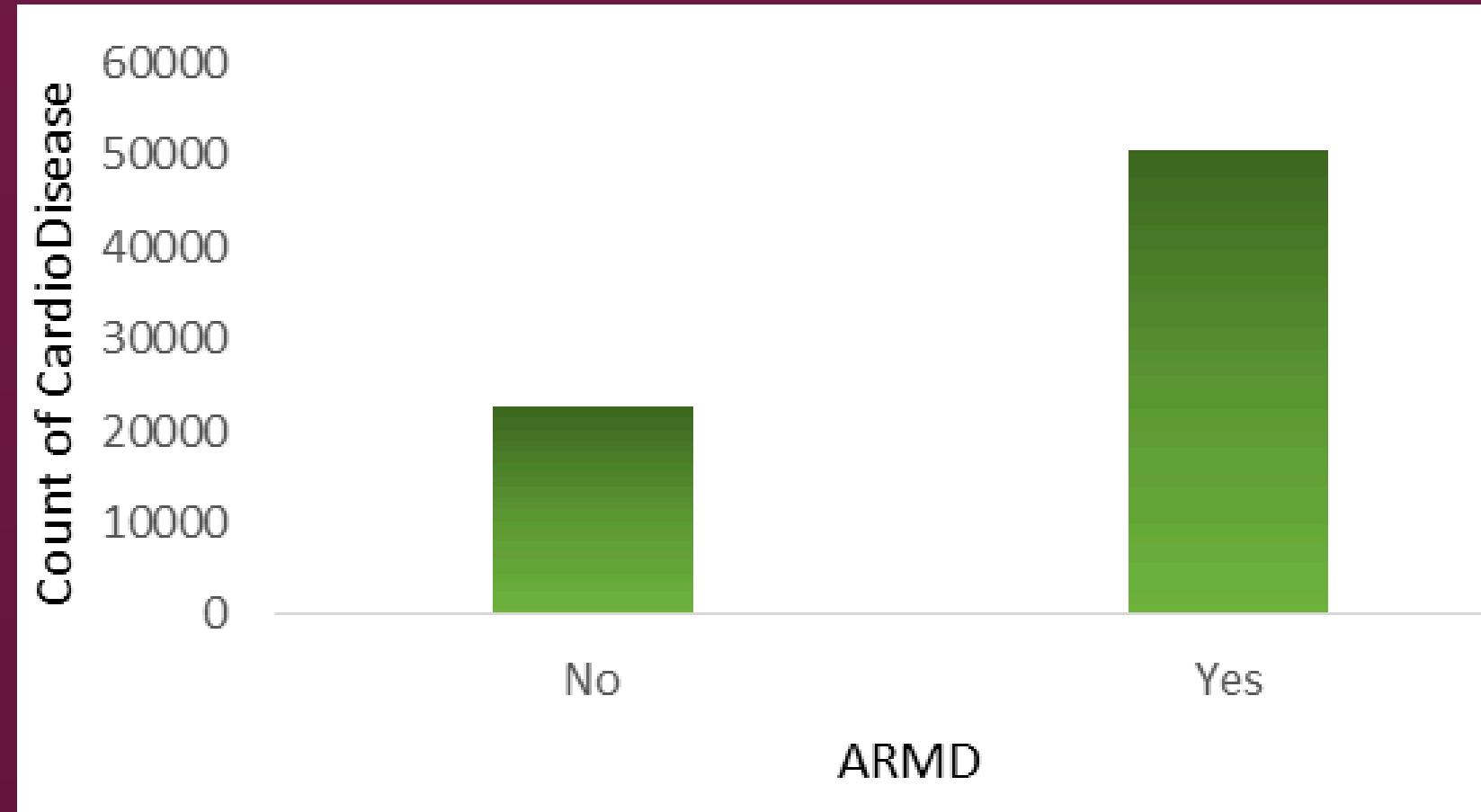
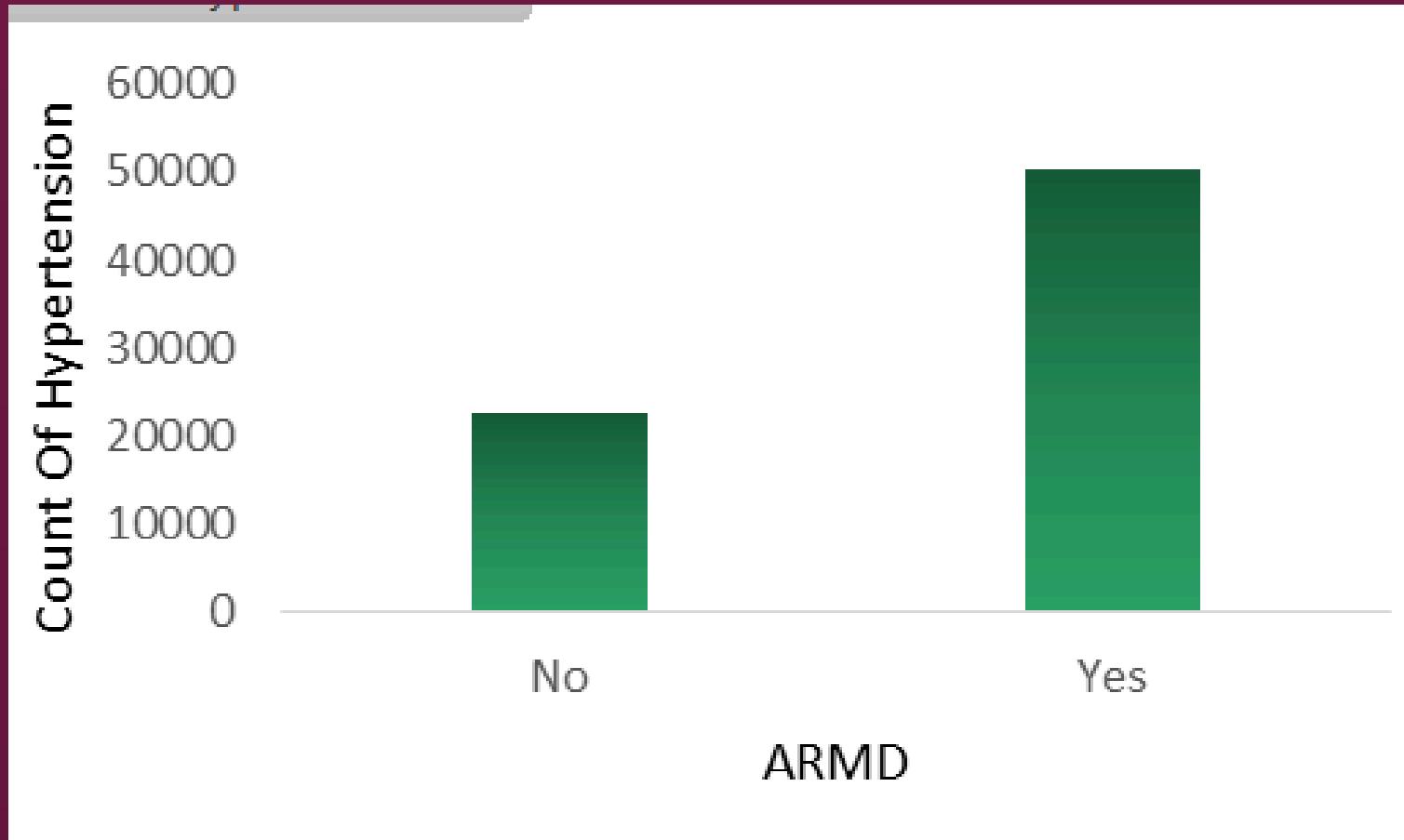


PREVALANCE OF DRUSEN TYPE WITH AGE

- As ARMD advances, soft drusen increases.



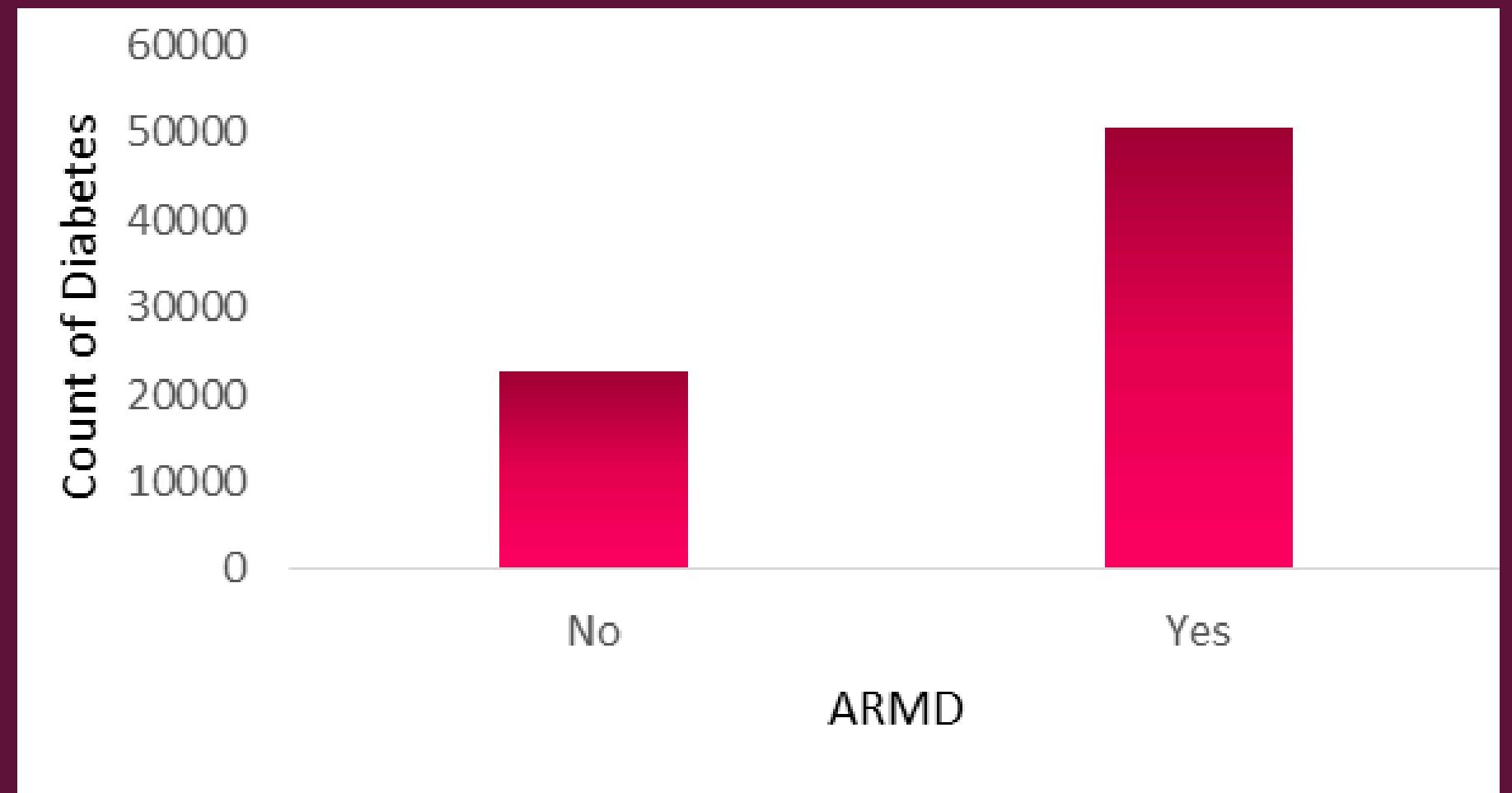
AFFECT OF HYPERTENSION,DIABETES AND CARDIC DISEASES ON ARMD



AMD has direct relationship with

- Hypertension
- Cardiac Disease

- Diabetes is directly proportional to ARMD.



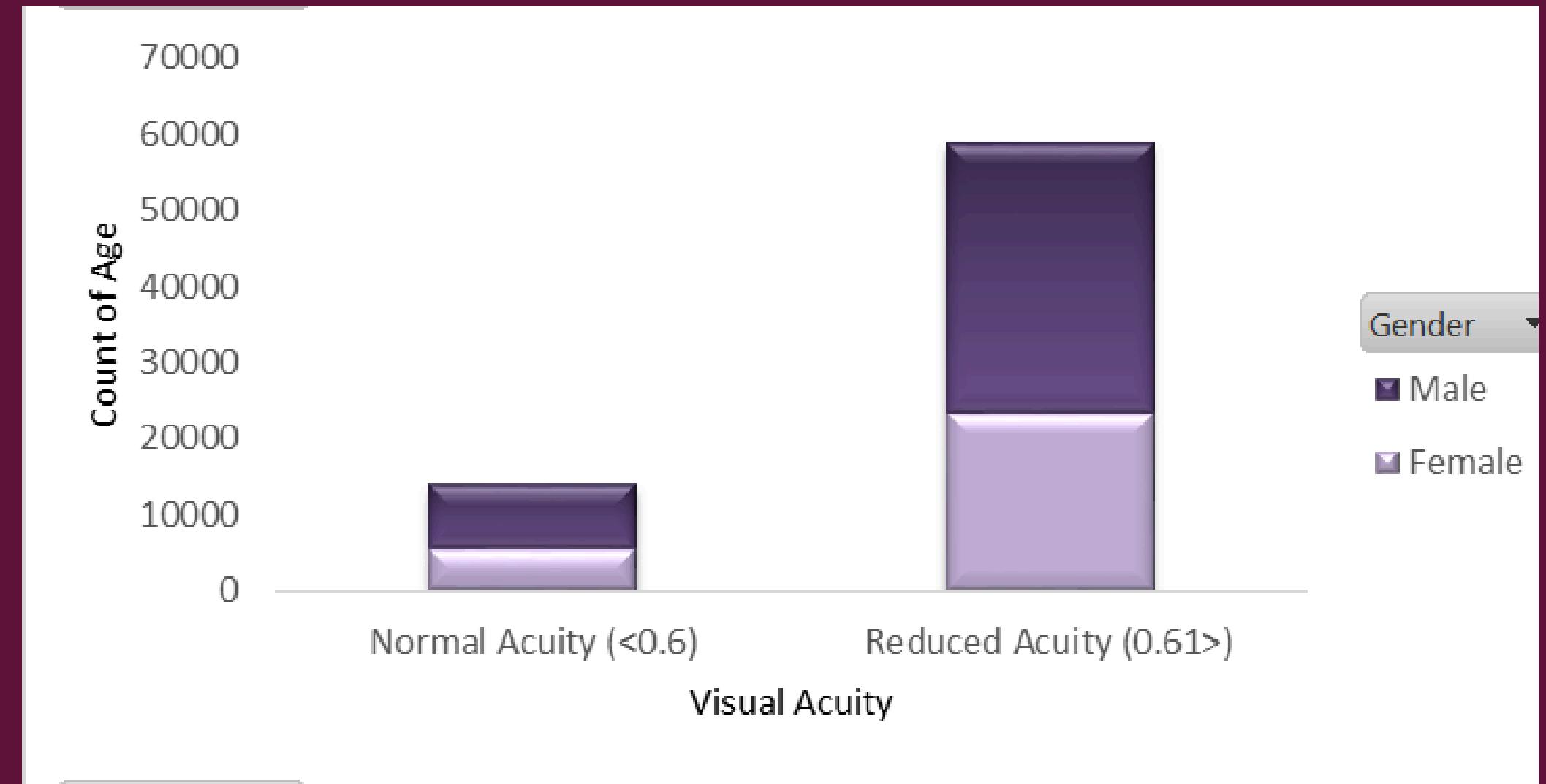


SECTION

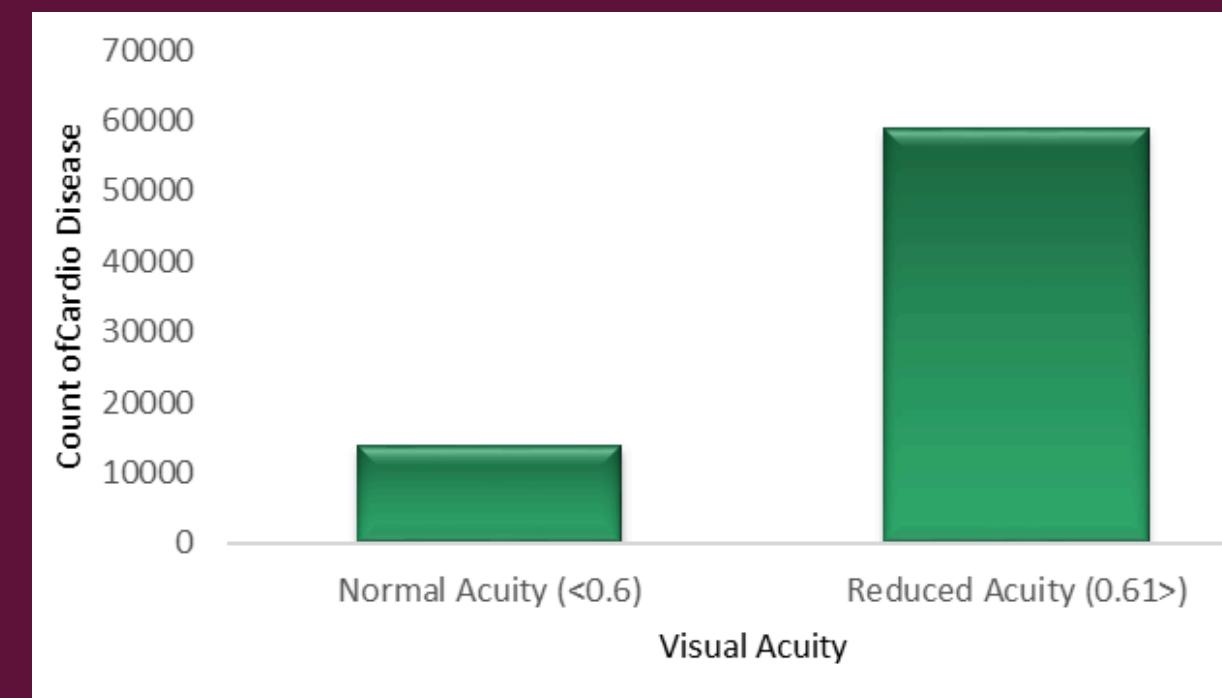
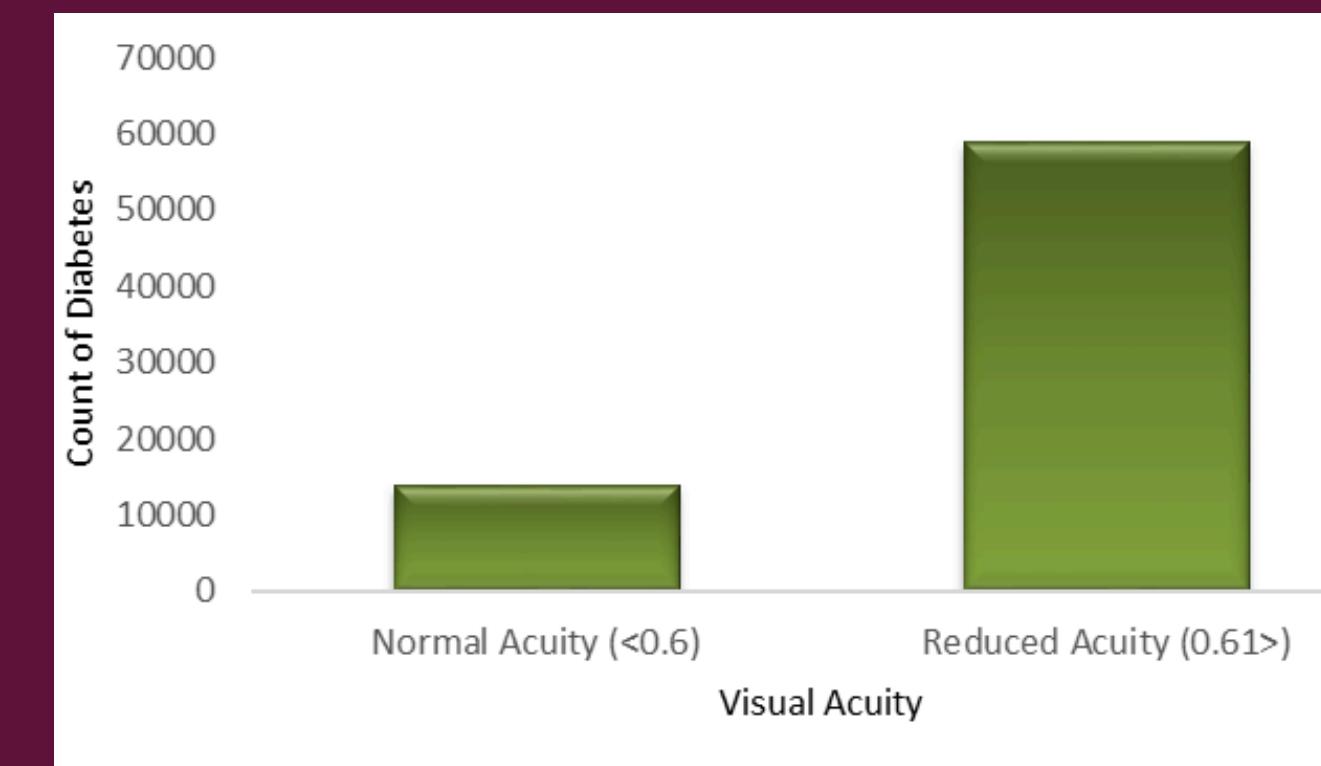
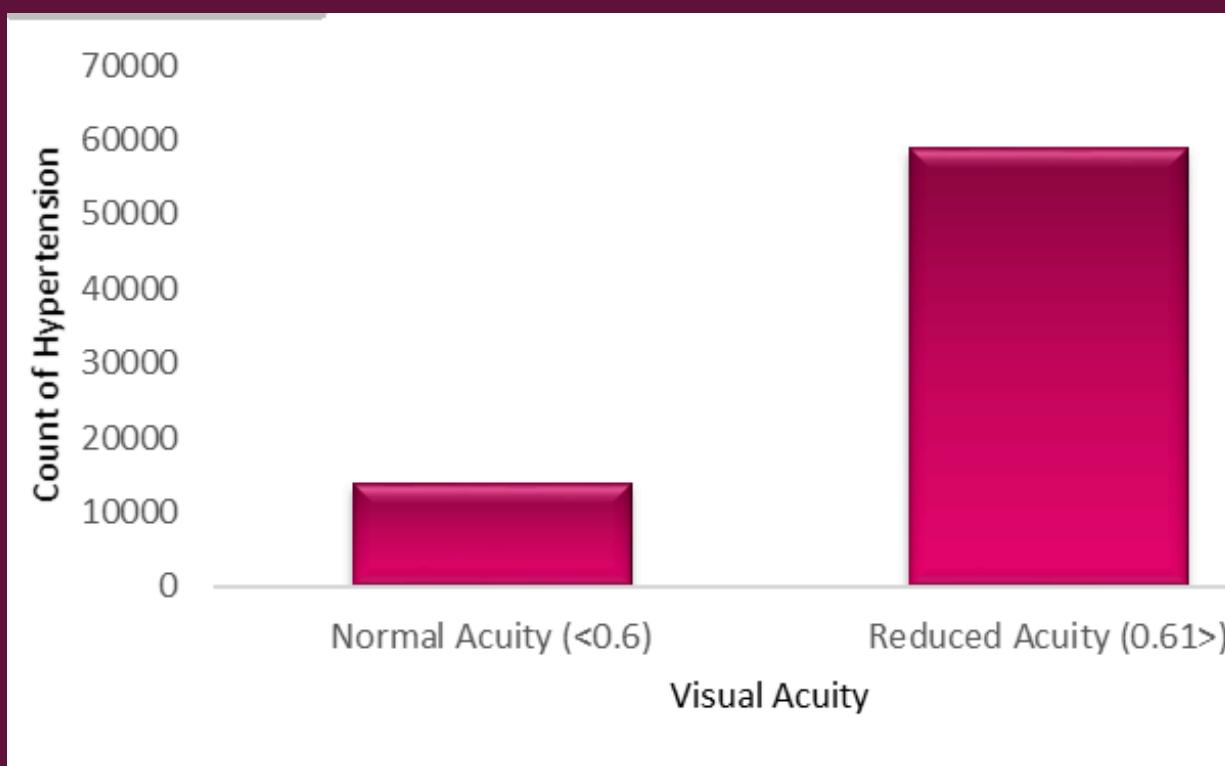
VISUAL ACUITY

TREND OF VISUAL ACUITY WITH AGE AND GENDER

- Visual acuity gets worse with age
- Males show more decline than females



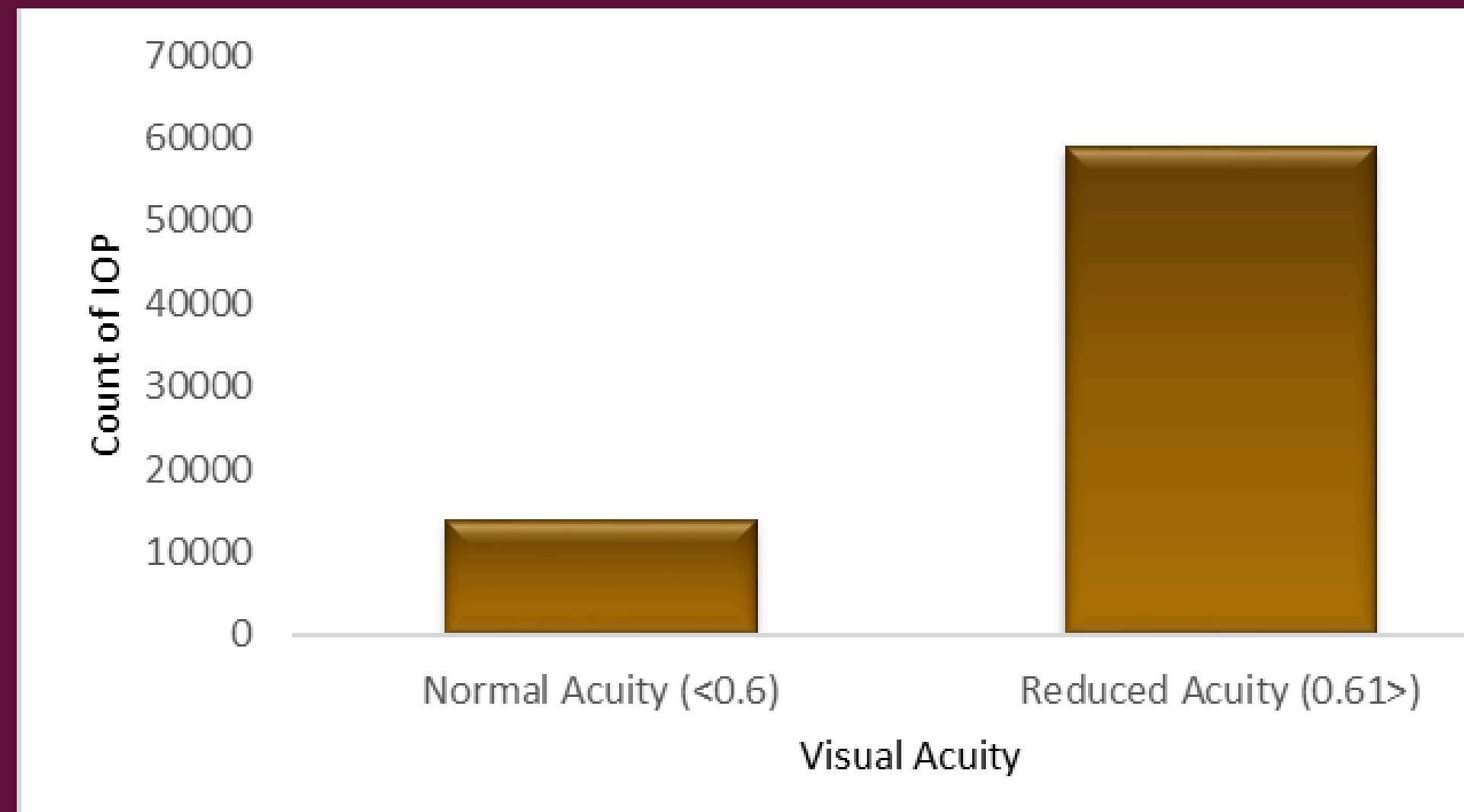
AFFECT OF HYPERTENSION,DIABETES AND CARDIAC DISEASES OF VISUAL ACUITY



- Systemic Diseases has inverse relationship with Visual Acuity.

RELATIONSHIP BETWEEN VISUAL ACUITY AND IOP

- Higher IOP → Lower visual acuity.
- Indicates potential risk for vision loss with elevated IOP.



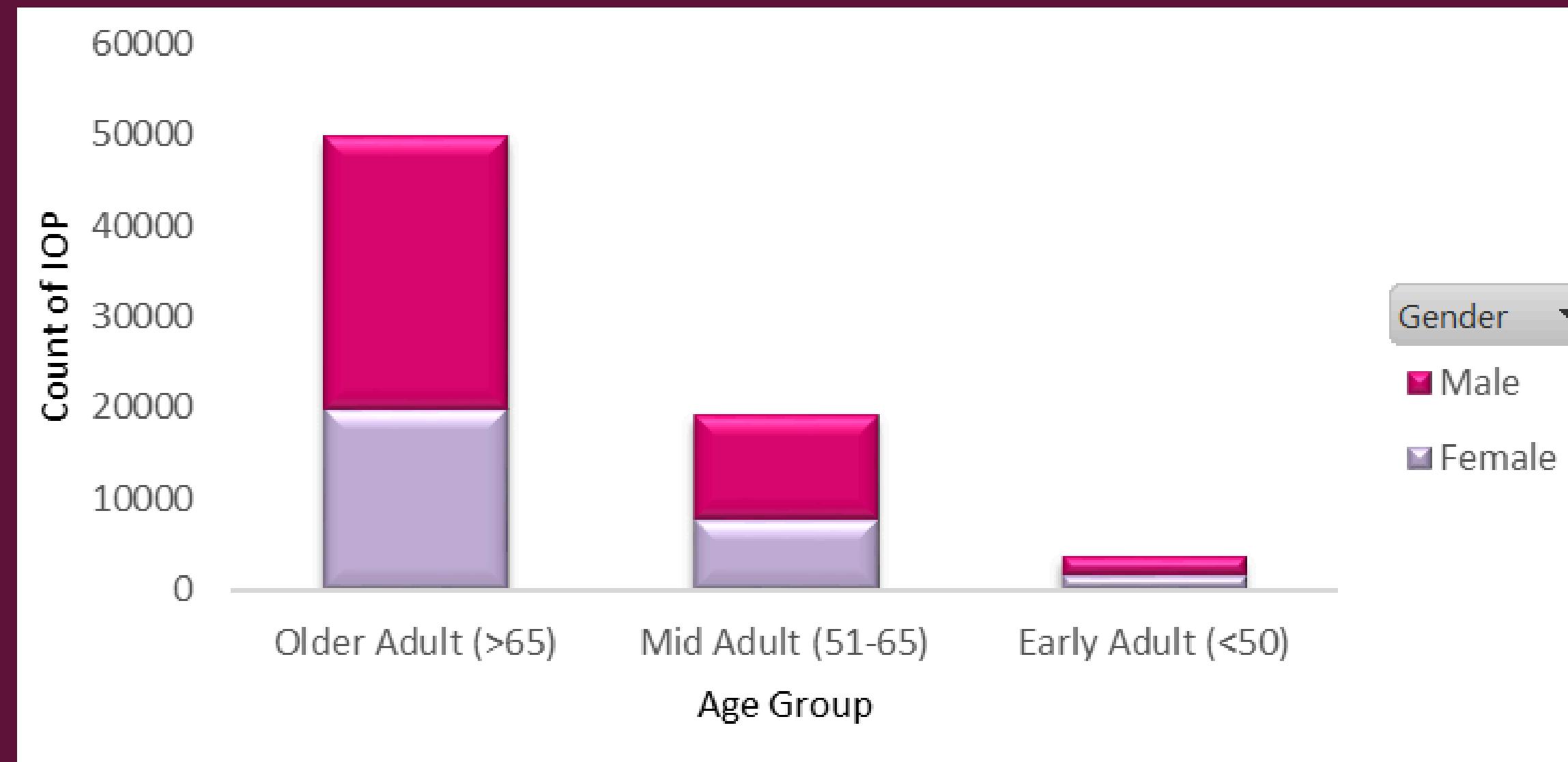


SECTION

INTRAOOCULAR PRESSURE

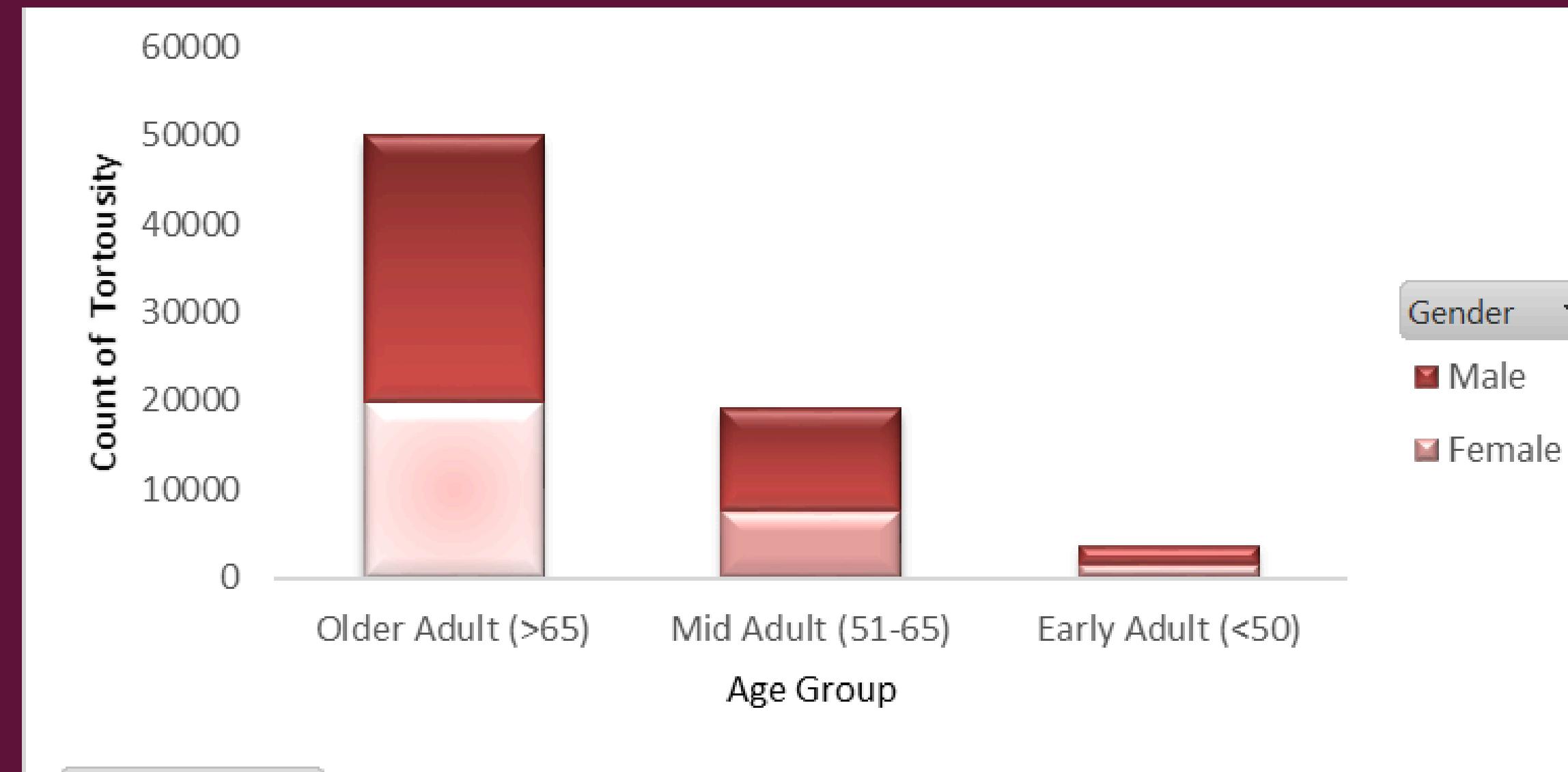
PREVALANCE OF INTRAOCCULAR PRESSURE BY AGE AND GENDER

- Intraocular pressure (IOP) increases with age
- Aging males are at higher risk of elevated IOP.



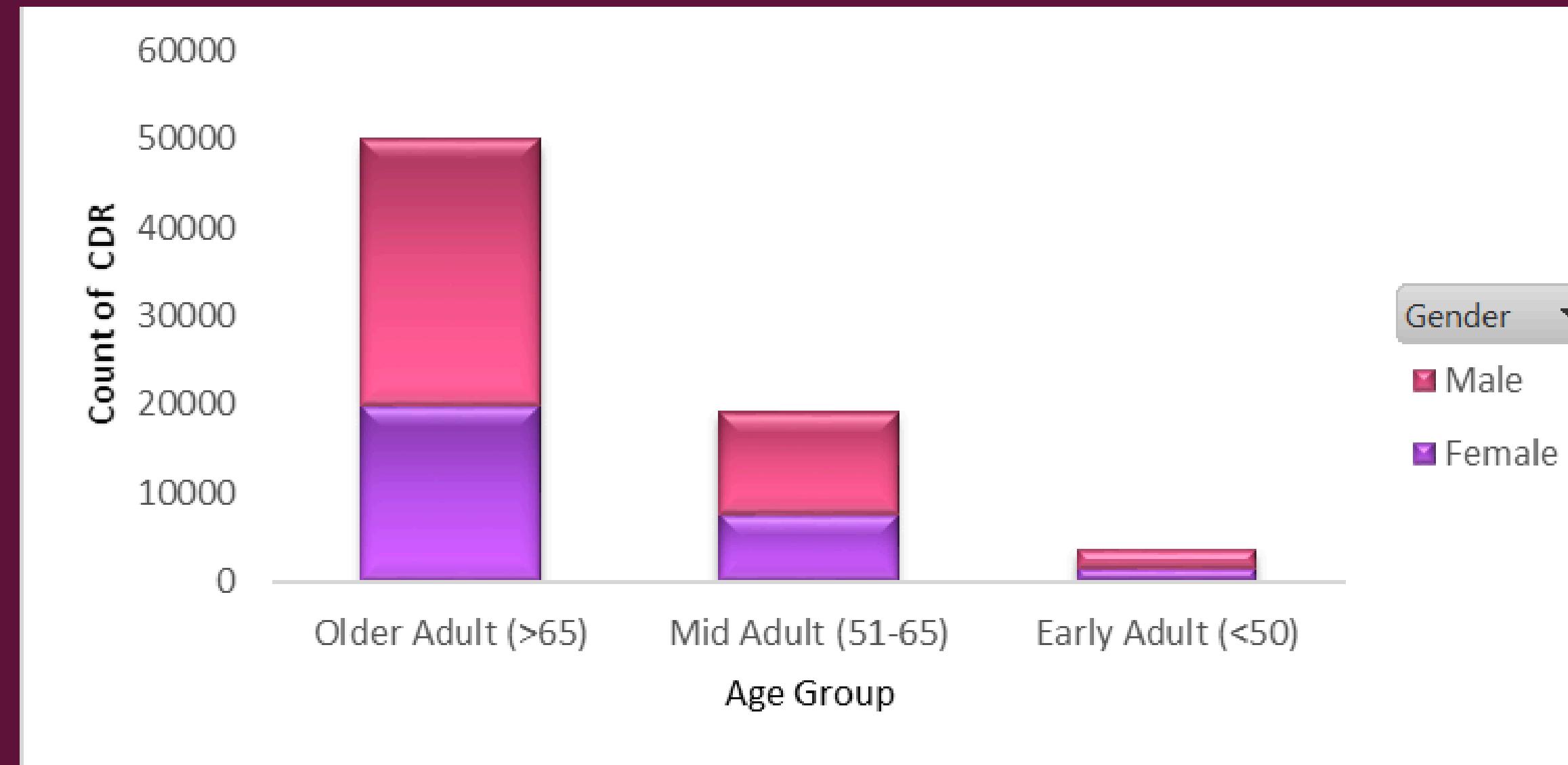
VESSEL TORTOOSITY BY AGE AND GENDER

- The trend shows higher vessel tortuosity in older individuals.
- Males are affected more than females.



AGE AND GENDER RELATED CHANGES IN CUP TO DISC RATIO

- Cup-to-Disc ratio enlarges with advancing age.
- Males exhibiting a greater increase than females.





Measure Sugar level and B.P

Precautionary Measures



Regular Eye Check up



Regular Medication



Healthy Diet



Healthy LifeStyle

Conclusion

- Diabetes, hypertension, and cardiac disease negatively impact eye health and reduce visual acuity.
- These systemic diseases accelerate the progression of age-related macular degeneration (ARMD).
- Increased intraocular pressure (IOP) further decreases vision and affects the cup-to-disc ratio (CDR).
- Long-term presence of these conditions contributes to diabetic retinopathy and hypertensive retinopathy.
- Overall, systemic diseases play a major role in worsening ocular outcomes and accelerating vision loss.





THANK YOU!

