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## Data in Brief

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## Data Article

## Data on eye movements in people with glaucoma and peers with normal vision

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## ABSTRACT

Eye movements of glaucoma patients have been shown to differ from age-similar control groups when performing everyday tasks, such as reading (Burton et al., 2012; Smith et al., 2014) [1,2], visual search (Smith et al., 2012) [3], face recognition (Glen et al., 2013) [4], driving, and viewing static images (Smith et al., 2012) [5]. Described here is the dataset from a recent publication in which we compared the eye-movements of 44 glaucoma patients and 32 age-similar controls, while they watched a series of short video clips taken from television programs (Crabb et al., 2018) [6]. Gaze was recorded at 1000 Hz using a remote eye-tracker. We also provide demographic information and results from a clinical examination of vision for each participant.

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## Specifications Table

Subject area	Visual science
More specific subject area	Visual science, Optometry, Statistics
Type of data	Table (csv file) and raw data (ASCII text format)
How data was acquired	Monocular eye movements were recorded using the EyeLink 1000 (SR Research Ltd., Ontario, Canada) eye tracker. Visual field data were acquired using Humphrey Field Analyzer (HFA; Carl Zeiss Meditec, CA, USA). Visual acuity was measured using an Early Treatment Diabetic

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Data format	Retinopathy Study (ETDRS) chart and contrast sensitivity was measured with a Pelli-Robson chart.
Experimental factors	Raw data, analyzed
Experimental features	Participant (44 glaucoma patients and 32 peers with normal vision) watched three separate video clips without any explicit task instruction.
Data source location	Participants were positioned, using a chin rest, at a viewing distance of 60 cm.
Data accessibility	School of Health Science, City, University of London, UK The dataset is freely available (at <a href="https://doi.org/10.5281/zenodo.1156863">https://doi.org/10.5281/zenodo.1156863</a> ) for any academic, educational, and research purposes.

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### Value of the data

- Raw eye tracking data from 76 people with a median (interquartile range) age of 68 (63, 75) years will be useful for reanalysis by other scholars.
  - The data will allow researchers to develop their own methods for assessing eye movements while people watch everyday videos.
  - Data from clinical examinations of vision (visual acuity, contrast sensitivity, and visual field loss) could be used to investigate the relationship between eye movements and vision loss.
  - Data from visual fields could be used to explore the relationship between glaucoma and eye movements.
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## 1. Data

Eye movement data were collected to test the hypothesis that age-related neurodegenerative eye disease can be detected in a person's spontaneous eye-movements while watching video clips [6]. Gaze was recorded in 44 glaucoma patients, and 32 age-similar people with healthy vision. All patients had an established clinical diagnosis of chronic open angle glaucoma (COAG): an age-related disease of the optic nerve that can result in a progressive loss of visual function [7,8]. Each participant watched three video clips, for approximately 16 min in total, and completed standard clinical tests of visual function (visual acuity, contrast sensitivity, visual field examination). The dataset contains raw gaze data, processed eye movement data, clinical vision test results, and basic demographic information (age, sex) [1-5].

### 1.1. Participants

Forty-four people with glaucoma were recruited from clinics at Moorfields Eye Hospital NHS Foundation Trust, London. All patients had an established clinical diagnosis of chronic open angle glaucoma (COAG) for at least two years and were between 50 and 80 years of age. COAG was defined, following clinical guidelines, by the presence of reproducible visual field defects in at least one eye with corresponding damage to the optic nerve head and an open iridocorneal drainage angle on gonioscopy [9]. The diagnosis was made by a glaucoma specialist. A deliberate attempt was made to recruit a sample of patients with a range of disease severity according to visual field loss. Patients were purposely not recruited if they had any ocular disease other than glaucoma (except for an uncomplicated lens replacement cataract surgery). In addition, at the point of recruitment, patients had slit lamp biomicroscopy performed by an ophthalmologist to further exclude any other concomitant macular pathology, ocular surface disease or any significant problems with dry eye.

Thirty two healthy people (controls), of a similar age to the patients, were recruited from the City University London Optometry Clinic; this is a primary care centre where people routinely receive a full eye examination, which includes measurement of visual acuity, refraction, binocular vision

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