01/19/79

FRAMINGHAM EYE STUDY

CODE DESCRIPTION

Office of Biometry and Epidemiology
National Eye Institute
National Institutes of Health
Building 31, Room 6A10
Bethesda, Maryland 20014

(Updates to this document till be sent to those recipients who request that their name be kept on file for that purpose.)

FRAMINGHAM EYE STUDY

CODE DESCRIPTION

1. Introduction

This code description is for the data tape which contains the data collected in the Framingham Eye Study. Complete description of the Study, including examination protocols and data collection forms, is found in the Framingham Rye Study Monograph, and users of the data tape should be familiar with the Monograph to insure their adequate understanding and appropriate use of the items on the tape. Some Items and codes on the tape are not on the data collection forms but have been created through coding or computer processing. Card deck and column numbers correspond in general to the data collection forms and examination protocols, but the description which follows is the complete, final reference.

The card image format has been retained for the organization of the data, and no attempt has been made to eliminate redundant items (e.g., record number, birth date) which occur in several places in the data. Some redundancy was further introduced for convenience in early data processing.

Only numeric codes and blanks appear on the tape. The use of leading blanks or leading zeros is consistent within an item (data field) but not across items.

Tape variables identified in the code description by a three-digit E-number (e.g., E001, E002, etc.) are so marked for convenience in reference. Variables not so marked are either redundant variables or those whose use is not generally recommended.

Tape copies given to users outside of the National Eye Institute (NEI) differ from the master tape: record numbers are recoded to preserve the anonymity of the study participants. In the code description given to those users, archival data in Items 20:23-34 and 20:58-74 are not described=

2. Data files on the tape

	Deck No.	Deck Title
FILE 1:	11,12,13	Screening Examination
	14,15,16	Definitive Examination
	17,18	Glaucoma Suspect Recall Examination
	19,20	Computer-generated summary codes
	21	Photograph Grading, Disc and Macula Fields, selected adjudicated grading
	22	Photograph Grading, Diabetic Retinopathy, selected adjudicated grading
FILE 2:	39	Photograph Grading, Disc and Macula Fields, two readers and adjudicator
FILE 3:		Photograph Grading, Diabetic Retinopathy, two readers and adjudicator
	40	O.D.
	41	O.S.

(Deck number appears in Columns 79-80 of each card Image.)

3. Tape characteristics

9-track, 1600 bpi, standard label (IBM)

File #	DSNAME	Contents	RECFM	LRECL	BLKSIZE	# RECORDS
1	FRAM.EYE.DATA	Main data file* (Decks 11-22)	FB	80	6720	32100
2	FRAM.DECK39	Disc 6 macula photograph grading (3 recs./case)	FB	80	6720	4614
3	FRAM.DECK40	Diabetic retinopathy photograph grading (6 records/case)	FB	80	6720	2688

* Data for each person occur in 12 consecutive records in FILE 1.

4. Decks 19 and 20

The user should carefully examine Decks 19 and 20 before deciding on analyses to be performed, as these decks contain final diagnoses of the four major conditions (open angle glaucoma, senile cataract, senile macular degeneration, diabetic retinopathy) conveniently grouped together with-selected items of interest from other parts of the tape and with computer-created summary codes.

5. Data quality control

Data in FILE 1, Decks 11-20, have been extensively edited. Decks 21 and 22 have received somewhat lesser editing, as have FILE 2 and FILE 3 (Decks 39, 40, and 41). Careful users will perform their own checks of consistency between interrelated items when that consistency is important to their analyses.

6. Fundus photograph data

Photograph data appear in three forms and places:

a) In Decks 39, 40, and 41: two replicate readings, plus one adjudicator reading when necessary;
b) In Decks 21 and 22: random selection of one of the two replicate readings, or the adjudicator's reading if available;
c) In Deck 20: summary items based on Decks 21 and 22.

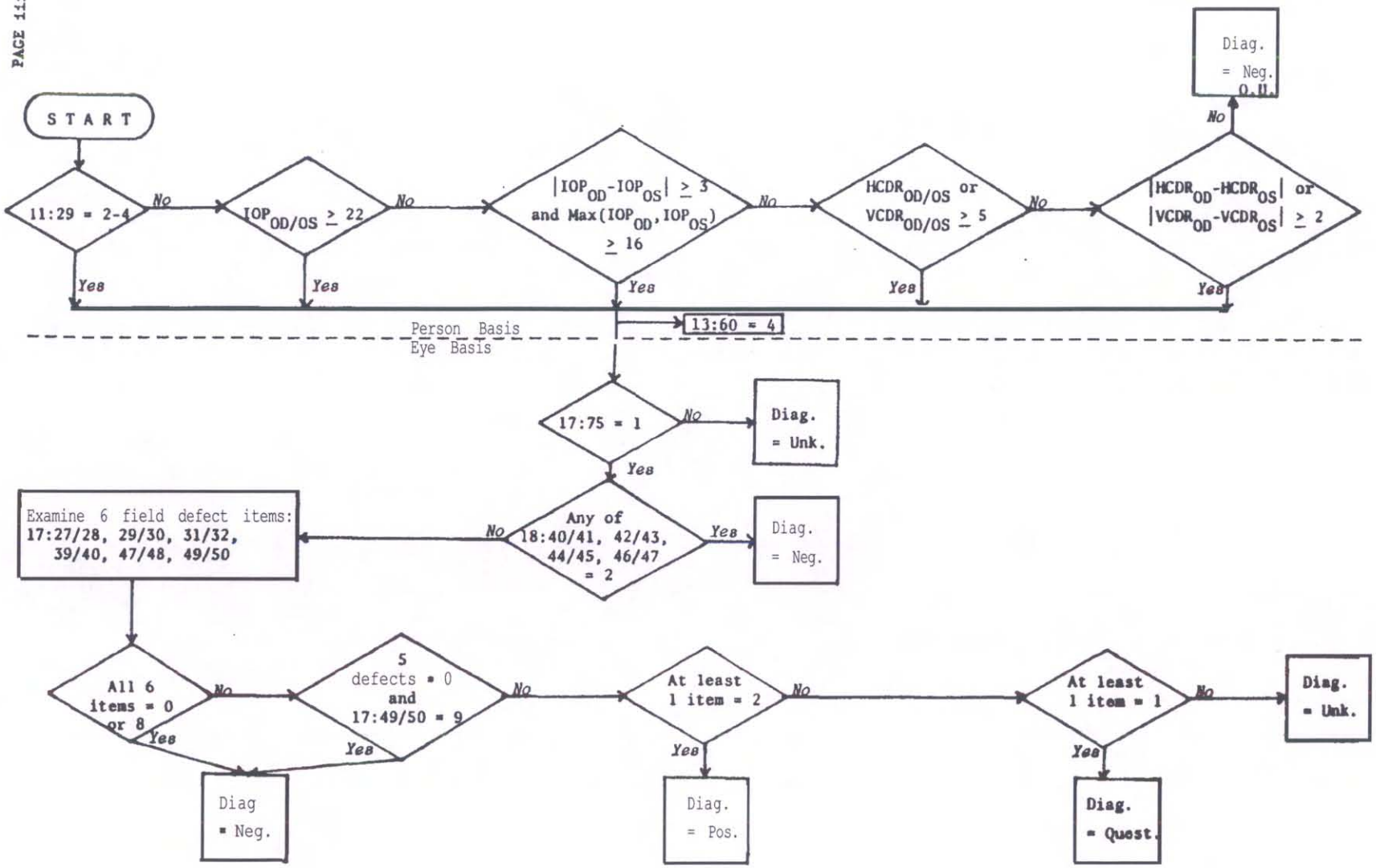
7. Diagnosis algorithms

Diagnoses of the four major conditions were constructed according to a series of explicit logical instructions Involving detailed items from Screening, Definitive, and Glaucoma Recall Examinations. The diagnoses so constructed are recorded in Items **19:9-16, 19:22-23,** and **19:58-62,** and are recommended for general use. Photographic data were not used in constructing these diagnoses.

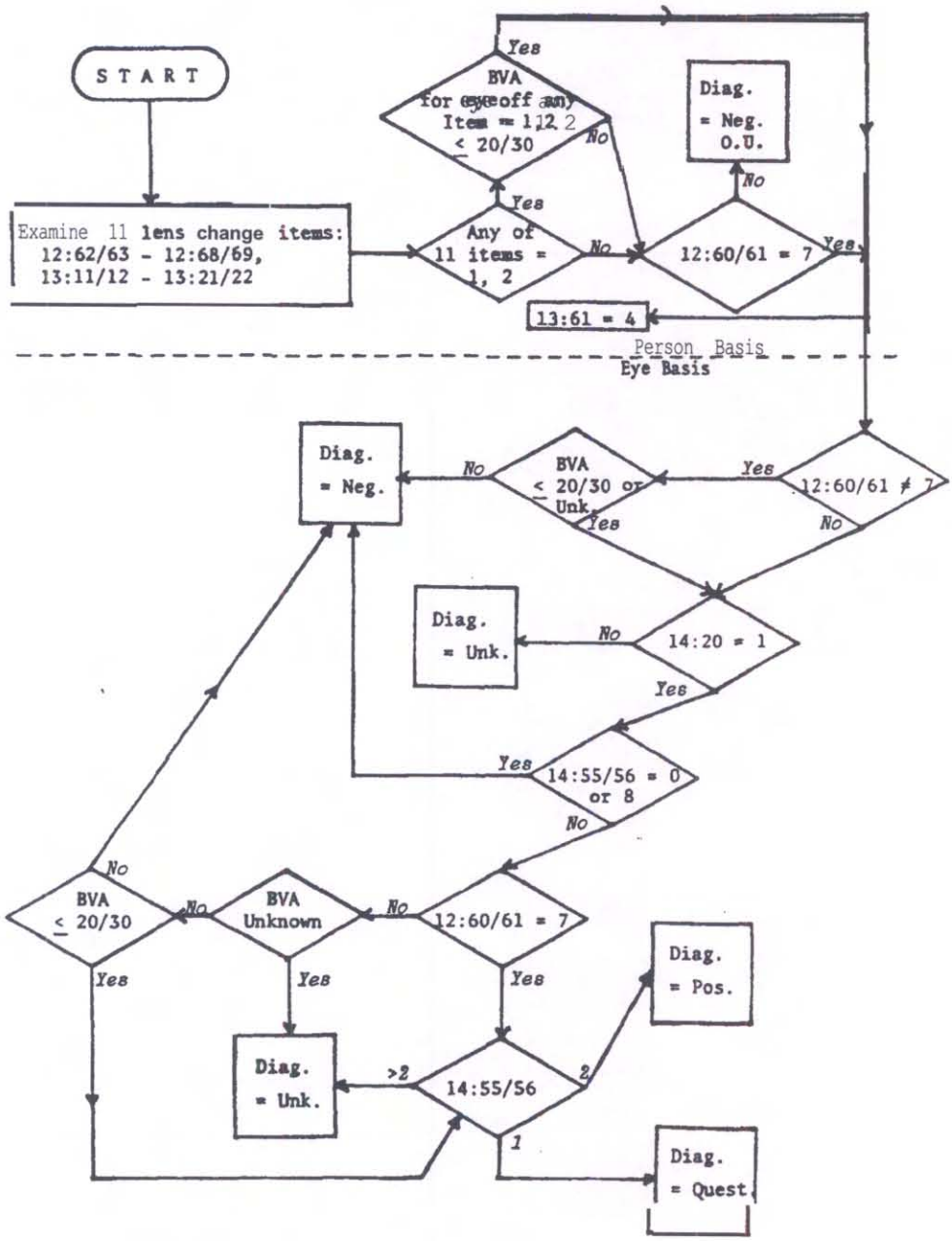
Specific items referred to in the following flow charts are as follows:

BVA	Best visual acuity	12:70-72/73-75
IOP	Average IOP	13:67-68/69-70
RCDR	Horizontal cup/disc ratio	13:27-28/29-30
VCDR	Vertical cup/disc ratio	13:31-32/33-34

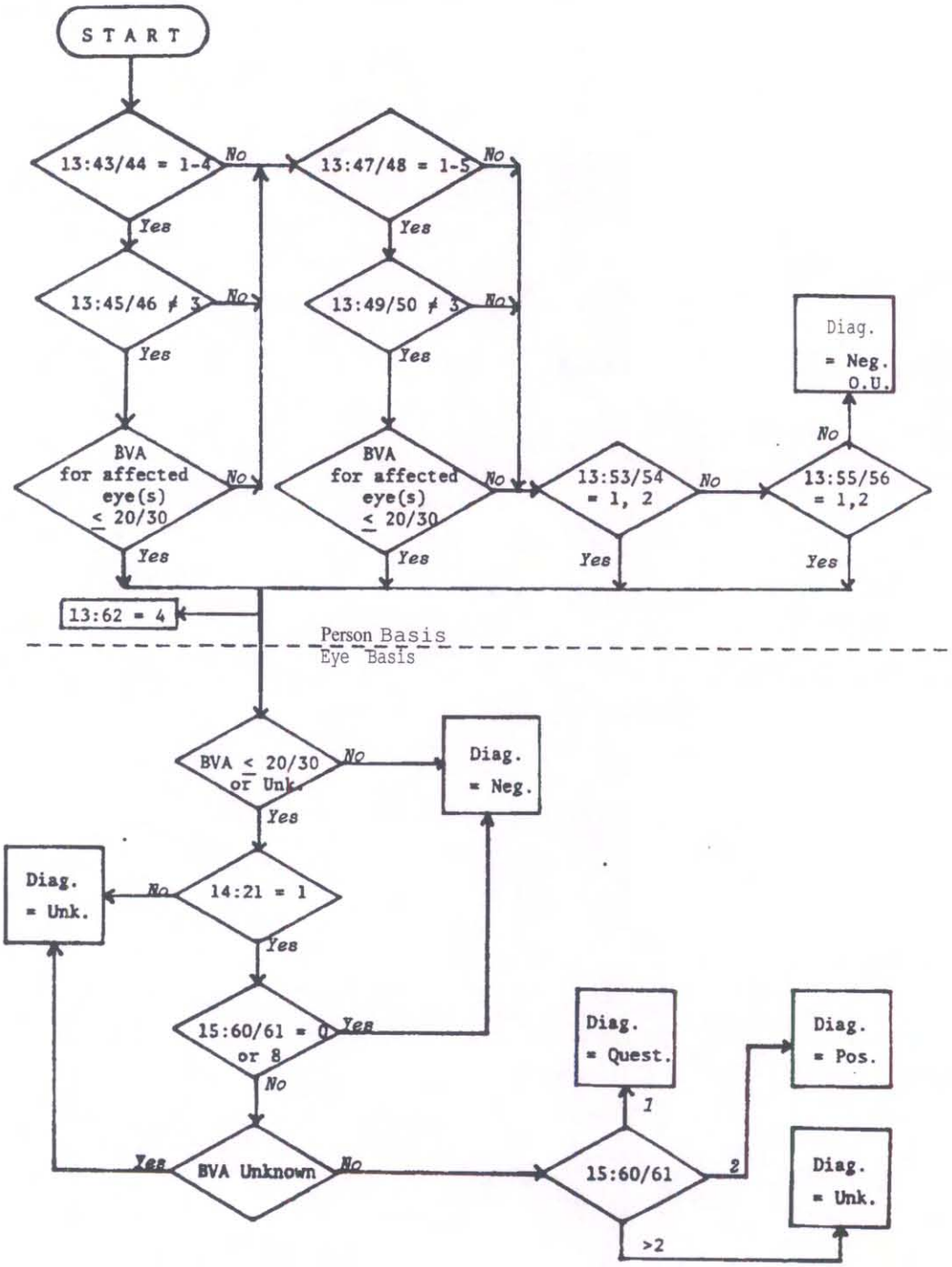
OPEN ANGLE GLAUCOMA



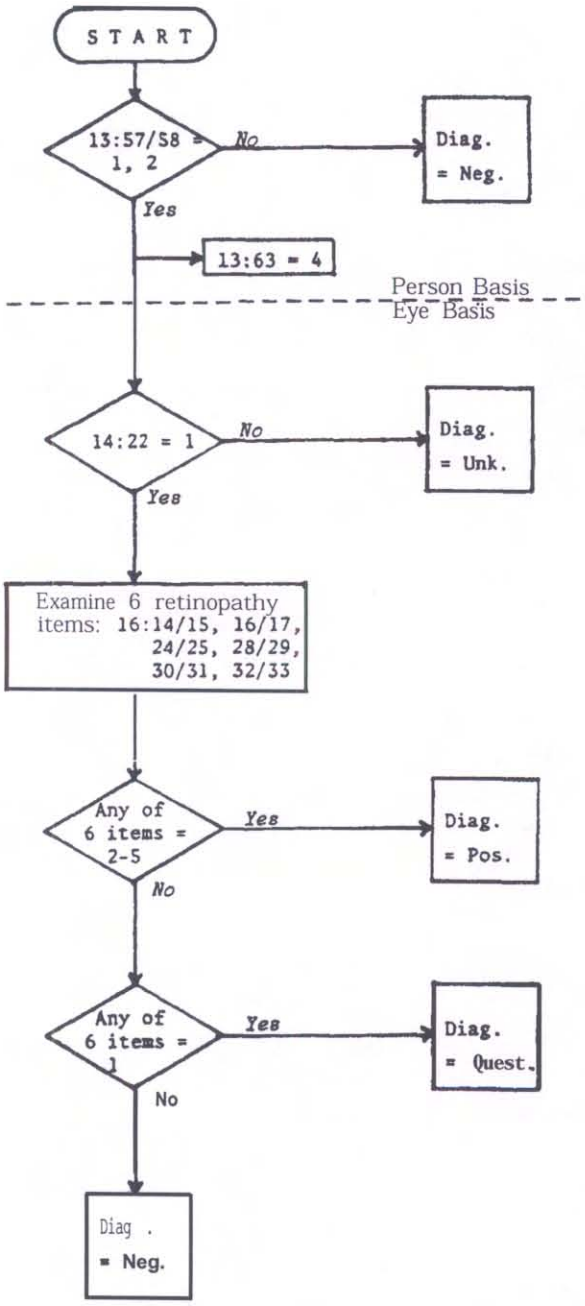
SENILE CATARACT



SENILE **MACULAR** DEGENERATION



DIABETIC* RETINOPATHY



* This flow diagram is for retinopathy with or vithout diabetes. Pot diabetic retinopathy, all cases with 19:24 = 0 are negative.

CODE DESCRIPTION

FILE 1

SCREENING EXAMINATION – Framingham Eye Study
Form NIH-1897-1, Rev. 4-73 (Decks 1-13)

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
PID	11: 1-4	Random ID Number 10000142-19997933 Data modified to protect confidentiality
E005	11: 11-12	Age (at last birthday) 52-85 Actual range
LASTEXAM		Exam number of the last completed clinic exam prior to eye exam

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E012	**11:23**	Cataract history 0 Negative 1 Questionable 2 Positive 9 Unknown
E013	**11:24-25**	If cataract questionable or positive, age first diagnosed 00-83 Age in years, reported range 88 Negative cataract history 99 Unknown age diagnosed, or unknown cataract history
E014	**11:26**	Macular degeneration history 0 Negative 1 Questionable 2 Positive 9 Unknown
E015	**11:27-28**	If macular degeneration questionable or positive, age first diagnosed 53-81 Age in years, reported range 88 Negative macular degeneration history 99 Unknown age diagnosed, or unknown macular degeneration history
E016	**11:29**	Glaucoma, history of treatment 0 Negative 1 Questionable 2 Positive, medical Rx only 3 Positive, surgical Rx 4 Positive, Rx unknown 9 History unknown
E017	**11:30-31**	If glaucoma questionable or positive, age first diagnosed 06-81 Age in years, reported range 88 Negative glaucoma history 99 Unknown age diagnosed, or unknown glaucoma history
E018	**11:32**	Mabetes mellitus history 0 Negative 1 Questionable 2 Positive 9 **Unknown**
E019	**11:33-34**	If diabetes questionable or positive, age first diagnosed 08-80 Age in years, reported range 88 Negative diabetes history 99 Unknown age diagnosed, or unknown diabetes history

	Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
54 1	E020	**11:35**	Present treatment 0 None 1 Diet alone 2 Oral medication, no insulin 3 Oral medication plus insulin 4 Insulin, no oral medication 5 Other 8 Negative diabetes history 9 Unknown treatment, or unknown diabetes history
55 1	E021	**11:36**	Diabetic coma 0 Negative 1 Questionable 2 Positive 8. Negative diabetes **history** 9 Unknown if coma, or unknown diabetes history
56 1	E022	**11:37**	If diabetic coma questionable or positive, type: 2 Hypoglycemic 3 Hyperglycemic 4 Both 8 Negative coma history, or negative diabetes history 9 Unknown type, or unknown if coma, or unknown diabetes history
60 2	E023	**11:38-39**	If questionable or positive, years since last episode 00 Less than one year 01-30 Number of years 88 Negative coma history, or negative diabetes history 99 Unknown number of years, **or** unknown if coma, or unknown diabetes history
63 1	E024	**11:40**	Loss of an eye (includes **enucleation** and phthisis **bulbi)** 0 Negative 2 **O.D.** absent 3 **O.S.** absent 4 **O.U.** absent
64 1	E025	**11:41**	Visual acuity: Bow tested 2 With distance glasses 3 Without distance glasses **8** Not tested, **O.U.** 9 Unknown

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
	11:42-71	Visual acuities (V.A.)*
67 5 E026	11:42-46	Visual acuity, (first) O.D.
73 5 E027	11:47-51	Visual acuity, (first) O.S.
79 5 E028	11:52-56	Visual acuity with pinhole, O.D. (if V.A. 20/25 or worse)
85 5 E029	11:57-61	Visual acuity with pinhole, O.S. (if V.A. 20/25 or worse)
91 5 E030	11:62-66	Visual acuity after Rx, O.D. (if pinhole 20/30 or worse)
97 5 E031	11:67-71	Visual acuity after Rx, O.S. (if pinhole 20/30 or worse)

Code	Visual Acuity	Ln(1/V.A.)
20010	20/10	-0.693
20015	20/15	-0.288
20020	20/20	0.000
20025	20/25	0.223
20030	20/30	0.405
20035	20/35	0.560
20040	20/40	0.693
20050	20/50	0.916
20060	20/60	1.099
20070	20/70	1.253
20080	20/80	1.386
20100	20/100	1.609
20200	20/200	2.303
20300	20/300	2.708
10300**	10/300	3.401
20400	20/400	2.996
19400	Reads 20/400 line 19' from chart	3.047
:	:	
01 400	Reads 20/400 line 1' from chart	5.491
20500	Counts fingers @ 20'	3.219
:	:	:
01500	Counts fingers @ 1' or unspecified distance	6.215
01600	Hand motion	6.397
01700	Light perception and projection	6.551
01800	Light perception	6.685
00001	No light perception	7.400***
88888*	Not applicable	8.880***
99999	Unknown	9.990***

* Visual acuity (11:42-46 and 11:47-51) is applicable for all eyes. Visual acuity with pinhole (11:52-56 and 11:57-61) is applicable if visual acuity for the eye is 20/25 or worse (excluding "no light perception"). Visual acuity after refraction (11:62-66 and 11:67-71) is applicable if both visual acuity and visual acuity with pinhole for the eye are 20/30 or worse (excluding "no light perception"). If visual acuity is "no light perception" for an eye, both visual acuity with pinhole and visual acuity after refraction are not applicable (code 88888) for that eye.

** Protocol did not provide for examining at less than 20 feet with the "20/300" line; however, one left eye has 10/300 for all three visual acuities.

*** Ln is set arbitrarily.

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
103 3 **E032**	**11:72-74**	Rx spherical equivalent, O.D. = (± sphere) + 1/2 (± cylinder)
107 3 E033	**11:75-77**	Rx spherical equivalent, O.S. = (± sphere) + 1/2 (± cylinder)

Code	Sian	Diopters
000*	+	0.00-0.05
001	+	0.06-0.15
002	+	0.16-0.25
:	:	
098	+	9.76-9.85
099	+	**≥9.86**
100	-	0.00-0.05
101	-	0.06-0.15
102	-	0.16-0.25
	:	:
198	-	**9.76-9.85**
199	-	**≥9.86**
888**		Not applicable
999		Unknown

* Code 000 for spherical equivalent includes some instances of "cannot improve" and **"plano."**

** Examined without distance glasses and first visual acuity or pinhole was **20/25** or better or was no light perception.

111 1 E034	**12:11**	**Arcus senilis, O.D.**
113 1 E035	**12:12**	**Arcus senilis, O.S.**

0	Absent
1	Questionable
2	Resent
8	Eye absent
9	**Unknown**

	Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
115	E036	**12:13**	Marginal degeneration, cornea, O.D.
117	E037	**12:14**	Marginal degeneration, cornea, O.S.
			See Column 12
119	E038	**12:15**	Peripheral neovascularization, cornea, O.D.
121	E039	**12:16**	Peripheral neovascularization, cornea, O.S.
			See Column 12
123	E040	**12:17**	**Stromal** opacity, cornea, **O.D.**
125	**E041**	**12:18**	**Stromal** opacity, cornea, O.S.
			See Column 12
127	E042	**12:19**	Number of central cornea guttata (A), O.D.
129	**E043**	**12:20**	Number of central cornea guttata (A), O.S.
			0 Central guttata are absent
			1 Guttata questionably present, either central or peripheral
			2 Central guttata present, < 10 without edema
			3 Central guttata present, ≥ 10 without edema
			4 Central guttata present, with edema
			8 Eye absent
			9 Unknown number, or unknown if central guttata present
131	E044	**12:21**	Location of cornea guttata **(B),** O.D.
133	E045	**12:22**	location of cornea guttata **(B),** O.S.
			0 Both central and peripheral guttata are absent
			1 Guttata, any kind, questionably present (central, peripheral, or unknown location)
			2 Resent - central
			3 Resent - peripheral
			4 Resent - central & peripheral
			8 Bye absent
			9 Unknown if any kind of guttata are present
135	E046	**12:23**	Pigment granules on corneal endothelium, O.D.
137	E047	**12:24**	Pigment granules on corneal endothelium, **O.S.**
			0 Absent
			1 Questionable
			2 Resent **c** 10
			3 Resent ≥ 10 (no spindle)
			4 Resent ≥ 10 (questionable spindle)
			5 Resent ≥ 10 (definite spindle)
			8 **Eye** absent
			9 **Unknown**

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E048	**12:25**	Iris atrophy, **O.D.**
E049	**12:26**	Iris atrophy, **O.S.**
		0 Absent
		1 Questionable
		2 Resent, pupillary margin
		3 Resent, **stroma**
		4 Resent, both
		5 Resent, location unspecified (Form NIH-1897-1, 5-72)
		8 Eye absent
		9 Unknown
E050	**12:27**	Pupil reaction, **O.D.**
E051	**12:28**	Pupil reaction, **O.S.**
		0 None
		1 Sluggish
		2 Brisk
		8 Eye absent
		9 Unknown
E052	**12:29**	Tonometry instrument
		1 Applanation
		2 Schiotz
		8 Eye absent, **O.U.**
		9 Unknown instrument, **or** tonometry not done
	12:30-41	Intraocular pressure (for average, see **13:67-70**)
E053	**12:30-31**	First pressure, **O.D.**
E054	**12:32-33**	First pressure, **O.S.**
E055	**12:34-35**	Second pressure, **O.D.**
E056	**12:36-37**	Second pressure, **O.S.**
E057	**12:38-39**	Third pressure, **O.D.**
E058	**12:40-41**	Third pressure, **O.S.**
		01-76 Reported range in **mmHg**
		88 Eye absent
		99 Unknown
E059	**12:42-43**	Time pressure taken
		^: 9 A.M.
		12 : Noon
		13 1 P.M.
		: **:**
		22 **10** P.M.
		88 Eye absent, **O.U.**
		99 Unknown time, or tonometry not done

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E060	**12:44**	Tension reliable, **O.D.?**
E061	**12:45**	Tension reliable, **O.S.?**
		0 **Yes**
		1 Questionable
		2 No
		8 Eye absent
		9 Unknown if reliable, or tonometry not done
E062	**12:46-48**	Estimation of angle depth as **%** of corneal thickness, O.D.
E063	**12:49-51**	Estimation of angle depth as **%** of corneal thickness, **O.S.**
		000-300 **0-300%,** reported range
		888 Eye absent
		999 Unknown
E064	**12:52-53**	Narrowest angle width on gonioscopy, **O.D.**
E065	**12:54-55**	Narrowest angle width on gonioscopy, **O.S.**
		00-50 0 to 50 degrees
		88 Eye absent, or **12:46-48/49-51** $\geq$ 30% and pupil dilation is adequate
		99 Unknown
E066	**12:56**	Pupil dilation, O.D.
E067	**12:57**	Pupil dilation, O.S.
		0 Adequate
		2 Inadequate
		8 Not done, or eye absent
		9 Adequacy unknown
E068	**12:58**	Lens examination, **O.D.**
E069	**12:59**	Lens examination, **O.S.**
		0 Adequate
		2 Inadequate
		7 Aphakia
		8 Not examined, or eye absent
		9 Adequacy unknown
E070	**12:60**	Lens changes present, **O.D.**
E071	**12:61**	Lens changes present, O.S.
		(Summary of **12:62/63 - 12:68/69** and **13:11/12 - 13:21/22**)
		→ 0 Absent (all lens items = 0, or some = 0 and some = 9)
		1 Questionable (at least one Item = 1; none = **2**)
		2 Present (at least one item = 2)
		7 Aphakla (all items = **7**)
		8 Eye absent (all items = 8)
		9 Unknown (all items = 9)

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E072	**12:62**	Vacuoles, **O.D.**
E073	**12:63**	Vacuoles, **O.S.**
		0 Absent 1 Questionable 2 Present 7 Aphakia 8 Eye absent 9 Unknown
E074	**12:64**	Waterclefts, **O.D.**
E075	**12:65**	Waterclefts, **O.S.** See Column 63
E076	**12:66**	Spokes, **O.D.**
E077	**12:67**	Spokes, **O.S.** See Column 63
E078	**12:68**	Lamellar changes, **O.D.**
E079	**12:69**	Lamellar changes, **O.S.** See Column 63
E080	**12:70-72**	Best visual acuity, O.D.
E081	**12:73-75**	Best visual acuity, O.S. (Selected for each eye from **11:42-71**; code = visual acuity fractional value x 100)

Code	Visual Acuity
200	**20/10**
133	**20/15**
100	**20/20**
080	**20/25**
067	**20/30**
050	**20/40**
040	**20/50**
033	**20/60**
029	**20/70**
025	**20/80**
020	**20/100**
010	**20/200**
007	**20/300**
005	**20/400 - 18/400**
004	**17/400 - 14/400 &** counts fingers at 20-18 feet
003	**10/300, 13/400-10/400, &** counts fingers at 17-13 feet
002	**9/400-6/400 &** counts fingers at 12-8 feet
001	**5/400-2/400 &** counts fingers at 7-3 feet
000	**≤ 1/400 &** counts fingers at ≤ 2 feet
999	**Unknown**

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E082	**12:76**	Corneal pathology summary, O.D.
E083	**12:77**	Corneal pathology summary, O.S.
		(Summary of **12:11/12 - 12:23/24**)
		0 None (all items = 0)
		1 Questionable (at least one item = 1; none = 2-5)
		2 Present (at least one item = **2-5**)
		8 Eye absent (all items = **8**)
		9 Unknown (all items = 9, or some = 0 and some = **9**)
E084	**13:11**	Pseudoexfoliation of lens, **O.D.**
E085	**13:12**	Pseudoexfoliation of lens, **O.S.**
		0 Absent
		1 Questionable
		2 Present
		7 Aphakia
		8 Rye absent
		9 **Unknown**
E086	**13:13**	Cortical cuneiform lens changes, O.D.
E087	**13:14**	Cortical cuneiform lens changes, **O.S.**
		See Column 12
E088	**13:15**	Decreased lucency of nucleus, **O.D.**
E089	**13:16**	Decreased lucency of nucleus, O.S.
		See Column 12
E090	**13:17**	Posterior subcapsular lens changes, **O.D.**
E091	**13:18**	Posterior eubcapsular lens changes, **O.S.**
		See Column 12
E092	**13:19**	Other senile lens changes, O.D.
E093	**13:20**	Other senile lens changes, O.S.
		See Column 12

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E094	**13:21**	Other lens changes, O.D.
E095	**13:22**	Other lens changes, O.S.
		See Column 12
E096	**13:23**	**Fundus** examination, O.D.
E097	**13:24**	**Fundus** examination, **O.S.**
		0 Adequate
		2 Inadequate
		8 Not examined, or eye absent
		9 Adequacy unknown
E098	**13:25**	Ophthalmoscope used, **O.D.**
E099	**13:26**	Ophthalmoscope used, O.S.
		2 Direct only
		3 Indirect only
		4 Both direct and indirect
		8 Not **ophthalmoscoped,** or eye absent
		9 Unknown if direct or indirect
E100	**13:27-28**	Cup/disc ratio (in tenths), horizontal, **O.D.**
E101	**13:29-30**	Cup/disc ratio (in tenths), horizontal, **O.S.**
E102	**13:31-32**	Cup/disc ratio (in tenths), vertical, **O.D.**
E103	**13:33-34**	Cup/disc ratio (in tenths), vertical, **O.S.**
		00-10 0.0 - 1.0, reported range
		88 Eye absent
		99 Unknown
E104	**13:35**	Does cup touch edge of disc, **O.D.?**
E105	**13:36**	Does cup touch edge of disc, **O.S.?**
		0 No
		1 Questionable
		2 Yes, vertically
		3 Yes, horizontally
		4 Yes, both
		8 No cup, **or eye** absent
		9 Unknown
E106	**13:37**	Depth of cup, O.D.
E107	**13:38**	Depth of cup, O.S.
		0 No cup
		1 Questionable if cup is present
		2 Cup present, lamina **cribrosa** not visible
		3 Cup present, lamina **cribrosa** visible
		8 Eye absent
		9 **Unknown**

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E108	13:39	Diopter measure between cup bottom & top of disc, O.D.
E109	13:40	Diopter measure between cup bottom & top of disc, O.S.
		0-5 — 0-5 diopters
		8 — No cup, or eye absent
		9 — Unknown
E110	13:41	Myopic cup, O.D.
E111	13:42	Myopic cup, O.S.
		0 — Absent
		1 — Questionable
		2 — Resent
		8 — Eye absent
		9 — Unknown
		(For summary of macular pathology, see 13:77-78)
E113	13:44	Pigment disturbance, O.S.
		0 — None
		1 — Questionable
		2 — Present, subtle
		3 — Present, obvious
		4 — Resent, severe
		8 — Eye absent
		9 — Unknown
E115	13:46	If pigment disturbance questionable or present, location, O.S.
		2 — Macula
		3 — Posterior pole
		4 — Both
		8 — Eye absent, or no pigment disturbance, or unknown if pigment disturbance
		9 — Location unknown
E117	13:48	Macular drusen, O.S.
		0 — Absent
		1 — Questionable
		2 — Resent, small
		3 — Resent, large
		4 — Resent, both small and large
		5 — Resent, size unspecified (Form NIH-1897-1, S-72)
		8 — Eye absent
		9 — Unknown

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E119	**13:50**	If drusen questionable or present, location, **O.S.** 2 Macular 3 Peripheral 4 Both macular and peripheral 8 Eye absent, or no drusen, or unknown if drusen 9 Location unknown
E121	**13:52**	If drusen questionable or present, estimated number, **O.S.** 2 < 10 3 10-99 4 ≥ 100 8 Eye absent, or no drusen, or unknown if drusen 9 Number unknown
E123	**13:54**	Serous, hemorrhagic or proliferative elevation of pigment or neurosensory epithelium, O.S. 0 Absent 1 Questionable 2 Present 8 Eye absent 9 Unknown
E126	**13:57**	Microaneurysms and/or dot hemorrhages, O.D.
E127	**13:58**	Microaneurysms and/or dot hemorrhages, O.S. See Column 54

Tape variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E129	**13:60**	Meets referral criteria for glaucoma evaluation 0 No, meets no referral criteria, or unknown if meets referral criteria 2 Yes, meets referral criteria in effect through **5/9/73,** but does not meet criteria used after this date 3 Yes, meets referral criteria in effect **5/10/73** through **10/28/73,** but does not meet criteria used after this date 4 Yes, meets referral criteria at all points of the study
E130	**13:61**	Meets referral criteria for cataract evaluation 0 See Column 60, Code 0 2 See Column 60, Code 2 4 See Column 60, Code 4
E132	**13:63**	Meets referral criteria for diabetic retinopathy evaluation 0 See Column 60, Code 0 1 Referred for 7 photos only, meets no referral criterion for definitive evaluation 4 See Coluw 60, Code 4
E133	**13:64**	Meets referral criteria for other reasons 0 See Column 60, Code 0 4 See Column 60, Code 4
E134	**13:65**	Photos which should be taken 0 None 2 2 fields 3 7 fields, sample selection 4 7 fields, diabetes suspect 5 7 fields, sample **&** diabetes suspect Note: Person has code 2 if he met any referral criterion, whether or not that criterion was still in effect when he had Screening Examination. However, persons who **met** only criteria no longer in effect were not supposed to **have** photos, and code 2, though assigned, is not valid for such persons.

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E135	13:66	Ocular findings other than glaucoma, cataract, macular degeneration or diabetic retinopathy 0 No 1 Yes
E136	13:67-68	Average intraocular pressure, O.D.
E137	13:69-70	Average intraocular pressure, O.S. 1-76 Reported range in mmHg 99 No intraocular pressure measurement, or eye absent
E138	13:71	Best visual acuity class, O.D. (classified from 12:70-72)
E139	13:72	Best visual acuity class, O.S. (classified from 12:73-75) 1 Better than or equal to 20/20 2 20/25 3 Worse than or equal to. 20/30 5 Unknown (V.A. = 99999)
E140	13:76	Recoded examination (first examination form) 1 Recoded (Form NIH-1897-1, 5-72) Blank Not recoded (Form NIH-1897-1, Rev. 4-73)
E142	13:78	Macular pathology summary, O.S. (Summary--of 13:43/44 - 13:55/56) 0 No -pathology (all items = 0) 1 Questionable (at least 1 item = 1; none = 2-5) 2 Present (at least 1 item = 2-5) 8 Eye absent 9 Unknown (all items = 9, or some = 0 and some = 9)

DEFINITIVE EXAMINATION - Framingham Eye Study
Form NIH-1897-2, Rev. 4-73 (Decks 14-16)

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E147	**14:19**	Definitive examination status, glaucoma
E148	**14:20**	Definitive examination status, cataract
E149	**14:21**	Definitive examination status, macular degeneration
E150	**14:22**	Definitive examination status, diabetic retinopathy
E151	**14:23**	Definitive examination status, other referral reason
		0 Not examined
		1 **Examined**

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
		CATARACT SUSPECTS (14:24-62)
E152	14:24	History of conditions that may have contributed to presence of cataract other than senile type
		0 Negative
		2 Positive
		6 Cataract suspect, not examined
		9 Unknown
		Blank Does not meet referral criteria for cataract
E153	14:25	Lens examination, O.D.
E154	14:26	Lens examination, O.S.
		0 Adequate
		2 Inadequate
		6 Cataract suspect, not examined
		7 Aphakia
		8 Eye not examined, or eye absent
		9 -- Adequacy unknown
		Blank Does not meet referral criteria for cataract
E155	14:27	Lens changes present, O.D.
E156	14:28	Lens changes present, O.S.
		0 Absent
		1 Questionable
		2 Present
		6 Cataract suspect, not examined
		7 Aphakia
		8 Eye absent
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for cataract
	14:29-40	Location of lens changes:
E157	14:29	Capsular, O.D.
E158	14:30	Capsular, O.S.
E159	14:31	Subcapsular, O.D.
E160	14:32	Subcapsular, O.S.
E161	14:33	Cortical, O.D.
E162	14:34	Cortical, O.S.
E163	14:35	Nuclear, O.D.
E164	14:36	Nuclear, O.S.
E165	14:37	Perfpheral, O.D.
E166	14:38	Peripheral, O.S.
E167	14:39	Axial, O.D.
E168	14:40	Axial, O.S.
		0 Absent
		1 Questionable
		2 Resent
		6 Cataract suspect, not examined
		7 Aphakia
		8 Eye absent
		9 Unknown If this location, or lens changes unknown, or eye not examined
		Blank Does not meet referral criteria for cataract

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
	14:41-50	Type of lens opacity:
E169	**14:41**	Pseudoexfoliation, **O.D.**
E170	**14:42**	Pseudoexfoliation, O.S.
E171	**14:43**	Cuneiform, **O.D.**
E172	**14:44**	Cuneiform, **O.S.**
E173	**14:45**	Nuclear sclerosis, O.D.
E174	**14:46**	Nuclear sclerosis, **O.S.**
E175	**14:47**	Posterior subcapsular, O.D.
E176	**14:48**	Posterior subcapsular, **O.S.**
E1 77	**14:49**	Other lens opacity, **O.D.**
E178	**14:50**	Other lens opacity, **O.S.**
		0 Absent
		1 Questionable
		2 Present
		6 Cataract suspect, not examined
		7 Aphakia
		8 Eye absent
		9 Unknown if this type, or lens changes unknown, or eye not examined
		Blank Does not meet referral criteria for cataract
E179	**14:51**	Stage of lens opacity, **O.D.**
E180	**14:52**	Stage of lens opacity, **O.S.**
		0 Absent
		2 Immature, nontumescent
		3 Immature, tumescent
		4 Mature
		5 Bypermature
		6 Cataract suspect, not examined
		7 Aphakia
		8 Eye absent
		9 Stage unknown, or eye not examined
		Blank Does not meet referral criteria for cataract
	14:53-54	If both opacity and best V.A. of **20/30** or worse are present, can the opacity account entirely for the visual defect?
		Note: No eye with opacity had unknown **V.A.**
E181	**14:53**	O.D.
E182	**14:54**	**O.S.**
		0 No
		1 Questionable
		2 Yes
		6 Cataract suspect, not examined
		7 **Aphakia**
		8 Absent eye, or lens changes absent or unknown, or eye not examined, or best **V.A. 20/25** or better
		9 Unknown if opacity accounts entirely for **V.A.** of **20/30** or worse
		Blank Does not meet referral criteria for cataract

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
	14:55-62	Etiology of opacity or aphakia:
E183	**14:55**	Senile, **O.D.**
E184	**14:56**	Senile, **O.S.**
E185	**14:57**	Congenital, **O.D.**
E186	**14:58**	Congenital, **O.S.**
E187	**14:59**	Secondary, **O.D.**
E188	**14:60**	Secondary, **O.S.**
E189	**14:61**	Other, **O.D.**
E190	**14:62**	Other, O.S.

0	No, or lens changes absent, or not **aphakic**
1	Questionable
2	Yes
6	Cataract suspect, not examined
8	Absent eye
9	Unknown if this etiology, or lens changes unknown, or eye not examined
Blank	Does not meet referral criteria for cataract

Tape Variable	Card Source (Deck: **Gols**)	Item, Code, and Description
		GLAUCOMA SUSPECTS **(15:11-32)**
E191	**15:11**	Disc examination, O.D.
E192	**15:12**	Disc examination, **O.S.**
		0 Adequate
		2 Inadequate
		6 Glaucoma suspect, not examined
		8 Not done, or eye absent
		9 Adequacy unknown
		Blank Does not meet referral criteria for glaucoma
E193	**15:13-14**	Cup/disc ratio (In tenths), horizontal, **O.D.**
E194	**15:15-16**	Cup/disc ratio (in tenths), horizontal, **O.S.**
E195	**15:17-18**	Cup/disc ratio (in tenths), vertical, **O.D.**
E196	**15:19-20**	Cup/disc ratio (in tenths), vertical, **O.S.**
		00-10 0.0 - 1.0, reported range
		66 Glaucoma suspect, not examined
		88 Eye absent
		99 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma
E197	**15:21**	Does cup touch edge of disc, **O.D.?**
E198	**15:22**	Does cup touch edge of disc, O.S.?
		0 No
		1 Questionable
		2 Yes, vertically
		3 Yes, horizontally
		4 Yes, both
		6 Glaucoma suspect, not examined
		8 Eye absent, or no cup
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma
E199	**15:23**	Depth of cup, **O.D.**
E200	**15:24**	Depth of cup, **O.S.**
		1 Cup questionably present
		2 Cup present, lamina **cribrosa** not visible
		3 Cup present, lamina **cribrosa** visible
		6 Glaucoma suspect, not examined
		8 Eye absent, or no cup
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma
E201	**15:25**	Diopter measure between cup bottom and top of disc, **O.D.**
E202	**15:26**	Diopter measure between cup bottom and top of disc, **O.S.**
		0-4 Reported range in diopters
		6 Glaucoma suspect, not examined
		8 Eye absent, or no cup
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E203	**15:27**	Myopic cup, O.D.
E204	**15:28**	**Myopic** cup, **O.S.**
		0 Absent
		1 Questionable
		2 Present
		6 Glaucoma suspect, not examined
		8 Eye absent, or no cup
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma
E205	**15:29**	Excavation of cup, O.D.
E206	**15:30**	Excavation of cup, **O.S.**
		0 None
		1 Questionable
		2 Present
		6 Glaucoma suspect, not examined
		8 Eye absent, or no cup
		9 Unknown, or eye not examined
		Blank Does not meet referral criteria for glaucoma
E207	**15:31**	Nasal displacement of blood vessels, **O.D.**
E208	**15:32**	Nasal displacement of blood vessels, **O.S.**
		See Column 30

MACULAR DEGENERATION SUSPECTS **(15:33-73)**

Note: "Absent eye" does not appear in the code description for macular degeneration suspects because no person with an absent eye had definitive examination of the **remaining** eye for macular degeneration.

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E250	**16:11**	History of any disease or condition that might be associated with retinal microaneurysms or dot hemorrhages 0 Negative 2 Positive 6 Diabetic retinopathy suspect, not examined 9 Unknown Blank Does not meet referral criteria for diabetic retinopathy
E251	**16:12**	**Fundus** examination, **O.D.**
E252	**16:13**	**Fundus** examination, **O.S.** 0 Adequate 2 Inadequate 6 Diabetic retinopathy suspect, not examined 8 Not done 9 Adequacy unknown Blank Does not meet referral criteria for diabetic retinopathy
	16:14-45	Grading of diabetic retlnopathy. Even-numbered columns contain codes for **O.D.;** odd-numbered, for **O.S.** For item descriptions, see table following the codes 0 (See the following table for definition of 1 (codes 0-5. An **"n.a."** in a code column 2 (indicates items for which the 3 (code **is** not valid. 4 (5 (6 Diabetic retinopathy suspect, not examined 9 Unknown, or eye not examined Blank Does not meet referral criteria for diabetic retinopathy

Tape Variable	Card Source (Deck: Cole)	Item, Code, and Description	Absent (0)	Questionable (1)	Present (2)	(3)	(4)	(5)
		(ALL SINGLE CAPITAL LETTERS REFER TO STANDARD DIABETIC RETINOPATHY PHOTOS) Type of Change						
E253 E254	16:14 16:15	Hemorrhages & microaneurysms (A,B)	abs.	ques.	<A	≥A <B	n.a.	≥B
E255 E256	16:16 16:17	Hard exudates (C,D)	abs.	ques.	<C	≥C <D	n.a.	≥D
E257 E258	16:18 16:19	Cotton wool patches (E)	abs.	ques.	n.a.	<E	n.a.	>E
E259 E260	16:20 16:21	Venous beading* (B,E,F,L)	abs. E	ques. B	n.a.	<F =L	n.a.	≥F
E261 E262	16:22 16:23	Arteriolar abnormalities*(G)	abs.	ques.	n.a.	<G	n.a.	at least 1 ≥G
E263 E264	16:24 16:25	Intraretinal microvascular abnormality (H)	abbe.	<H & ques.	n.a.	<H but def.	n.a.	≥H
E265 E266	16:26 16:27	Arteriovenous nicking (J)	abs.	ques.	n.a.	CJ	n.a.	≥J
E267 E268	16:28 16:29	Macular edema (D)	abs.	ques.	n.a.	<1 disc area	n.a.	≥1 disc area
E269 E270	16:30 16:31	Neovascularization within 1DD of disc (K,L)	abs.	ques.	n.a.	<K	≥K <L	≥L
E271 E272	16:32 16:33	Neovascularization outside 1DD of disc (G)	abs.	ques.	n.a.	<G	n.a.	≥G
E273 E274	16:34 16:35	Fibrous prolif. within 1DD of disc (M)	abs.	ques.	n.a.	<M	n.a.	≥M
E275 E276	16:36 16:37	Fibrous prolif. outride 1DD of disc (N)	• bs.	ques.	n.a.	<N	n.a.	≥N
E277 E278	16:38 16:39	Plane of prolif. (G,L,M,N,P)	total contact w/retina G&L	ques.	• lw. <1/4DD M	elev. ≥1/4DD <1DD	elev. ≥1DD <2DD 4	• lev. ≥2DD =P
E279 E280	16:40 16:41	Retinal • lwation (area) (P)	abs.	ques.	n.a.	<P <4DD	n.a.	≥P ≥4DD
E281 X282	16:42 16:43	Prerctinal hemorrhage (J,Q)	abs.	ques.	n.a.	<J & <Q	n.a.	≥J or ≥Q
E283 E284	16:44 16:45	*Vitreous* hemorrhage	abs.	ques.	all other lesions can be graded	can see ≥ 1/2 fundus	cannot see ≥ 1/2 fundus	cannot see fundus

*Ignore pathology within 1/2 DD of disc.

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
	16: 46-47	If both retinopathy and best V.A. of 20/30 or worse are present, can the retinopathy account entirely for the visual deficit? Note: No eye with retinopathy had unknown V.A.
E285	16: 46	O.D.
E286	16: 47	O.S. 0 No 1 Questionable 2 Yes 6 Diabetic retinopathy suspect, not examined 8 No retinopathy, or unknown if retinopathy, or best V.A. is 20/25 or better 9 Unknown if retinopathy accounts entirely for V.A. of 20/30 or worse Blank Does not meet referral criteria for diabetic retinopathy
E28 7	16: 48	Is the retinopathy due to diabetes, O.D.
E288	16: 49	Is the retinopathy due to diabetes, O.S. 0 No 1 Questionable 2 Yes 6 Diabetic retinopathy suspect, not examined 8 No retinopathy 9 Unknown if retinopathy, or unknown if retinopathy is due to diabetes Blank Does not meet referral criteria for diabetic retinopathy
E289	16: 50	Other suspects (condition suspected other than cataract, glaucoma, macular degeneration, or diabetic retinopathy) 0 Absent 1 Questionable 2 Resent 9 unknown, or "other suspect" not examined Blank Does not meet referral criteria for other suspect
E290	16: 60	Retinopathy summary, O.D.
E291	16: 61	Retinopathp summary, O.S. (Summary of 16: 14/15 - 16: 44/45) 0 Absent 1 Questionable 2 Resent 6 Diabetic retinopathy suspect, not examined 9 Unknown, or eye not examined Blank Does not meet referral criteria for diabetic retinopathy

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E292	16:77	Recoded examination (first examination form) 1 Recoded (Form NIH-1897-2, 5-72) Blank Not recoded (Form NIH-1897-2, Rev. 4-73)

GLAUCOMA SUSPECT RECALL EXAMINATION - Framingham Eye Study
Form NIB-1897-3, Rev. 10-73 (Decks 17-18)

Rote: If person did not have Glaucoma Suspect Recall Examination, Decks 17 and 18 are blank except for record number (17:1-4 and 18:1-4), Glaucoma Recall Examination status (17:75), and deck number (17:79-80 and 18:79-80).

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E298	17:21	Visual field reliable, O.D.
E299	17:22	Visual field reliable, O.S.
		0 Yes
		1 Questionable
		2 No
		8 Not done, or eye absent
		9 Unknown

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E300	17:27	Blind spot enlargement, O.D.
E301	17:28	Blind spot enlargement, O.S.
E302	17:29	Blind spot baring, O.D.
E303	17:30	Blind spot baring, O.S.
E304	17:31	Arcuate scotoma, O.D.
E305	17:32	Arcuate scotoma, O.S. 0 Negative 1 Doubtful 2 Definite 8 Eye absent 9 Unknown
E306	17:33-35	If arcuate scotoma present, length, O.D.
E307	17:36-38	If arcuate scotoma present, length, O.S. 75-360 Reported range in degrees 888 Arcuate scotoma is negative or unknown, or eye is absent 999 Unknown
E308	17:39	Paracentral scotoma, O.D.
E309	17:40	Paracentral scotoma, O.S. See Column 32
E310	17:41-43	If paracentral scotoma present, length, O.D.
E311	17:44-46	If paracentral scotoma present, length, O.S. 015-180 Reported range in degrees 888 Paracentral scotoma is negative or unknown, or eye is absent 999 Unknown
E312	17:47	Nasal step, O.D.
E313	17:48	Nasal step, O.S. See Column 32
E314	17:49	Advanced glaucomatous field loss, O.D.
E315	17:50	Advanced glaucomatous field loss, O.S. gee Column 32
E316	17:51-53	Maximum extent of visual field, O.D.
E317	17:54-56	Maximum extent of visual field, O.S. 000-150 Reported range in degrees 888 Eye absent 999 Unknown
E318	17:57-59	Minimum extent of visual field, O.D.
E319	17:60-62	Minimum extent of visual field, O.S. 000-130 Reported range in degrees 888 Rye absent 999 Unknown

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E320	**17:63**	Field loss due to conditions other than glaucoma, O.D.
E321	**17:64**	**Field** loss due to conditions other than glaucoma, O.S. 0 Negative (field defect is present) 1 Doubtful (field defect **is** present) 2 Definite (field defect **is** present) 8 No field defect, or eye absent 9 Unknown if field defect, or unknown if due to condition other than glaucoma
E322	**17:65**	Significant history or findings relating to secondary, congenital, or acute glaucoma, **O.D.**
E323	**17:66**	Significant history or findings relating to secondary, congenital, or acute glaucoma, **O.S.** 0 Negative 1 Doubtful 2 Definite 8 No field defect 9 **Unknown**
E324	**17:69-70**	Age (at birthday prior to glaucoma suspect recall examination) 52-84 Actual range
E325	**17:75**	Glaucoma recall examination status 0 Not examined 1 Examined

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E326	**18:11**	Tonometry instrument 1 Applanation 2 Schiotz 9 Unknown instrument, or tonometry not done
	18:12-23	Intraocular pressure (for average, see **18:63-66**)
E327	**18:12-13**	First pressure, O.D.
E328	**18:14-15**	First pressure, **O.S.**
E329	**18:16-17**	Second pressure, O.D.
E330	**18:18-19**	Second pressure, **O.S.**
E331	**18:20-21**	Third pressure, **O.D.**
E332	**18:22-23**	Third pressure, **O.S.** 02-55 Reported range in **mmHg** 88 Eye absent 99 Unknown
E333	**18:24-25**	Time pressure taken 09 9 **a.m.** : : **12** Noon 13 1 p.m. : 21 10 **p.m.** 99 Unknown time, or tonometry not done
E334	**18:26**	Tension reliable, **O.D.**
E335	**18:27**	Tension reliable, **O.S.** **0** **Yes** **1** Questionable **2** No **8** Eye absent **9** Unknown If reliable, or tonometry not done
E336	**18:28**	Gonioscopy adequate, **O.D.**
E337	**18:29**	Gonioscopy adequate, **O.S.** 0 Adequate 2 Inadequate 8 Eye absent, or gonioscopy not done 9 **Unknown**

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E338	**18:30-32**	Narrowest angle width, O.D.
E339	**18:33-35**	Narrowest angle width, **O.S.**
		000-050 Reported range in degrees
		888 Eye absent
		999 Unknown
E340	**18:36**	Significant angle abnormalities present, **O.D.**
E341	**18:37**	Significant angle abnormalities present, **O.S.**
		0 Negative
		1 Doubtful
		2 Definite
		8 Eye absent
		9 **Unknown**
	18:38-47	Etiology of glaucoma:
E342	**18:38**	Open angle, **O.D.**
E343	**18:39**	Open angle, **O.S.**
E344	**18:40**	Closed angle, **O.D.**
E345	**18:41**	Closed angle, **O.S.**
E346	**18:42**	Congenital, **O.D.**
E347	**18:43**	Congenital, **O.S.**
E348	**18:44**	Secondary, **O.D.**
E349	**18:45**	Secondary, **O.S.**
E350	**18:46**	Other, **O.D.**
E351	**18:47**	Other, **O.S.**
		0 No, or no field defects
		1 Questionable
		2 **Yes**
		8 Eye absent
		9 **Unknown**
E352	**18:48**	Best visual acuity class, **O.D.** (classified from **12:70-72**)
E353	**18:49**	Best visual acuity class, O.S. (classified from **12:73-75**)
		1 Better than or equal to **20/20**
		2 **20/25**
		3 Worse than or equal to **20/30**
		5 **Unknown (V.A. =** 99999)
E354	**18:50**	Meets referral criteria for glaucoma evaluation
		0 No, meets no referral criteria, or unknown if meets referral criteria
		2 Yes, meets referral criteria in effect through **5/9/73,** but does not meet criteria used **after this date**
		3 Yes, meets referral criteria In effect 5/10/73 through 10/28/73, but does not meet criteria used after this date
		4 Yes, meets referral criteria at all points of the study

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E355	**18:53**	Field defect summary, O.D.
E356	**18:54**	Field defect summary, **O.S.**

0	No field defect
1	Doubtful
2	Definite
8	Eye absent
9	**Unknown**

E357	**18:55-56**	Threshold stimulus, above, O.D.
E358	**18:57-58**	Threshold stimulus, above, **O.S.**
E359	**18:59-60**	Threshold stimulus, below, **O.D.**
E360	**18:61-62**	Threshold stimulus, below, **O.S.**

	Size	Intensity	
00	0	1	Least stimulus
01	I	1	|
02	I	2	|
03	I	3	|
04	I	4	|
05	11	4	|
06	III	4	|
07	IV	4	|
08	V	4	Greatest stimulus
88	Eye Absent		
99	Unknown		

E361	**18:63-64**	Average Intraocular pressure, O.D.
E362	**18:65-66**	Average intraocular pressure, O.S.

03-55	Reported range in **mmHg**, rounded to nearest Integer
88	Eye absent
99	Unknown

E363	**18:77**	Recoded examination (first examination form)

1	Recoded (Form NIH-1897-3, **5-72**)
Blank	Not recoded (Form NIH-1897-3, Rev. **10-73**)

MISCELLANEOUS **SUMMARY** ITEMS - Framingham Eye Study
(Decks 19-20)

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E364	**19:5**	Sex 1 Male 2 Female,
E365	**19:6-7**	Age (Same as **11:11-12**)
E366	**19:8**	Location (Last known residence at time Eye Study began as recorded in the Framingham Heart Study Master File of subjects) Note: Paper **#1** refers to the taxi area (code 1) as the "local area" and to the local area (code 2) plus the outside area (code 3) as "outside the local area." (See **20:58-74** for references to Papers **#1** and 2) 1 Taxf area: Framingham taxi area which includes the communities of Framingham (all) Ashland Holliston Bopkinton Natick Southboro 2 Local:-outside taxi area but within a 25 mile radius of Framingham 3. Outside area: beyond a 25 mile radius of Ramingham
	19:9-16	Diagnosis of four major conditions as classified in FES Monograph, by eye. (Cf. **20:23-34)** (For diagnosis by person, see **19:58-62)**
E367	**19:9**	Diagnosis of open angle glaucoma, O.D., as in FES Monograph
E368	**19:10**	Diagnosis of open angle glaucoma, **O.S.,** as in FES Monograph 1 Absent 2 Questionable 3 Positive 4 **Unknown**
E369	**19:11**	Diagnosis of eenile cataract, **O.D.,** *as* in **FES** Monograph
E370	**19:12**	Diagnosis of senile cataract, **O.S.,** as in FES Monograph See Column 10

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E373	**19:15**	Diagnosis of retinopathy with or without diabetes, **O.D.**, as in **FES** Monograph
E374	**19:16**	Diagnosis of retinopathy with or without diabetes, **O.S.**, as in FES Monograph See Column 10
E375	**19:17**	Time period Screening Examination given 1 February 1 through May 9, 1973 2 May 10, 1973 through October 28, 1973 3 After October 28, 1973
	19:18-21	Referral criteria for four major conditions, status of persons
E376	**19:18**	Meets referral criteria for glaucoma evaluation (Same as **13:60**) 0 No, meets no referral criteria, or unknown if meets referral criteria 2 Yes, meets referral criteria in effect through **5/9/73,** but does not meet criteria used after this date 3 Yes, meets referral criteria in **effect** 5/10/73 through **10/28/73,** but does not meet criteria used after this date 4 Yes, meets referral criteria at all points of the study
E377	**19:19**	Meets referral criteria for cataract evaluation (Same as **13:61**) 0 See Column 18, Code 0 2 See Column 18, Code 2 4 See Column 18, Code 4
E378	**19:20**	Meets referral criteria for macular degeneration evaluation (Same as **13:62**) 0 See Column 18, Code 0 2 See Column 18, Code 2 4 See Column 18, Code 4
E379	19: 21	Meets referral criteria for diabetic retinopathy evaluation (modification of **13:63;** If **13:63** = 0 or 1 then **19:21 = 0)** 0 See Column 18, Code 0 4 See **Column** 18, Code 4

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
	19:22-23	Diagnosis of diabetic retinopathy as in **FES Monograph** and confirmed by diagnosis of diabetes mellitus in Framingham Heart Study examinations 1-12
E380	**19:22**	O.D.
E381	**19:23**	**O.S.**

1 Absent
2 Questionable
3 Positive
4 Unknown

Note: Code = 1 for any person not diagnosed as having diabetes on the Heart Study. Persons diagnosed as having diabetes on the Heart Study have the same code as in **19:15/16.**

E383	**19:26**	Meets referral criteria for glaucoma evaluation, **O.D.**
E384	**19:27**	Meets referral criteria for glaucoma evaluation, **O.S.** See Column 18
E385	**19:28**	Meets referral criteria for cataract evaluation, **O.D.**
E386	**19:29**	Meets referral criteria for cataract evaluation, O.S. See Column 19
E389	**19:32**	Meets referral criteria for diabetic retinopathy evaluation, **O.D.**
E390	**19:33**	**Meets** referral criteria for diabetic retlnopathy evaluation, **O.S.** See Column 21

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
	19:34-57	These variables show the status of each eye for each referral criterion for definitive examination for glaucoma **(19:34-43)**, cataract **(19:44-47)**, macular degeneration **(19:48-55)**, and diabetic retinopathy **(19:56-57)**. The values in **19:26-33** are equal to the maximum value in **19:34-57** for each disease in each eye.
E391	**19:34**	Meets history criterion for glaucoma evaluation, O.D.
E392	**19:35**	Meets history criterion for glaucoma evaluation, **O.S.** Note: For each person, code for O.D. is the same as for **O.S.** 0 No **(11:29** = 0, 1, or 9) 4 Yes **(11:29** = 2, 3, or 4)
E393	**19:36**	Meets intraocular pressure (IOP) criterion for glaucoma evaluation, O.D.
E394	**19:37**	Meets intraocular pressure **(IOP)** criterion for glaucoma evaluation, O.S. 0 No; average IOP < 20, or is unknown, or eye is absent 3 Yes; average IOP = 20 or 21 4 Yes; average IOP ≥ 22
E395	**19:38**	Meets differential IOP criterion for glaucoma evaluation, **O.D.**
E396	**19:39**	Meets differential IOP criterion for glaucoma evaluation, **O.S.** 0 No; difference in average IOP between eyes = 0-2, or is unknown, or at least one eye is absent 2 Yes; difference in average IOP between eyes ≥ 3 and higher average IOP < 16 4 Yes; difference in average IOP between eyes ≥ 3 and higher average IOP ≥ 16
E397	**19:40**	Meets cup/disc ratio (CDR) criterion for glaucoma evaluation, **O.D.**
E398	**19:41**	Meets cup/disc ratio (CDR) criterion for glaucoma evaluation, **O.S.** 0 No; both horizontal and vertical CDR = **0.0-0.2** or unknown, or eye is absent 2 Yes; maximum of horizontal and vertical CDR = **0.3** 3 Yes; maximum of horizontal and vertical CDR = **0.4** 4 Yes; maximum of horizontal and vertical CDR ≥ **0.5**
E399	**19:42**	Meets differential CDR criterion for glaucoma evaluation, **O.D.**
E400	**19:43**	Meets differential CDR criterion for glaucoma evaluation, **O.S.** 0 No; difference in horizontal and vertical CDR between eyes = 0.0, 0.1, or unknown, or at least one eye is absent 4 Yes; difference in horizontal or vertical **CDR** between eyes ≥ 0.2

Tape Variable	Card Source (Deck: Cols)	Item, Code, and Description
E401	**19:44**	Meets lens changes criterion for cataract evaluation, **O.D.**
E402	**19:45**	Meets lens changes criterion for cataract evaluation, **O.S.**
		0 No; lens changes are absent or unknown, or eye is **aphakic** or absent **(12:60/61 = 0,7,8,** or 9)
		2 Yes; lens changes are questionable or present **(12:60/61 =** 1 or 2) and best visual acuity is **20/25** or better or is unknown
		4 Yes; lens changes are questionable or **present (12:60/61 =** 1 or 2) and best visual acuity is **20/30** or worse
E403	**19:46**	Meets aphakia criterion for cataract evaluation, O.D.
E404	**19:47**	Meets aphakia criterion for cataract evaluation, **O.S.**
		0 No **(12:60/61 ≠** 7)
		4 Yes **(12:60/61 =** 7)

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E413	**19:56**	Meets microaneurysm or dot hemorrhage criterion for diabetic retinopathy evaluation, O.D.
E414	**19:57**	Meets microaneurysm or dot hemorrhage criterion for diabetic retinopathy evaluation, **O.S.**
		0 No; microaneurysms and dot hemorrhages are absent or unknown, or eye is absent **(13:57/58 = 0,8,9)**
		4 Yes; microaneurysms and dot hemorrhages are questionable or present **(13:57/58 =** 1 or **2)**
	19:58-62	Diagnosis of four major conditions as classified in **FES** Monograph, by person (Cf. **20:23-34)**
E415	**19:58**	Diagnosis of open angle glaucoma, person status
E416	**19:59**	Diagnosis of senile cataract, person status
E417	**19:60**	Diagnosis of senile macular degeneration, person **status**
E418	**19:61**	Diagnosis of retinopathy with or without diabetes mellitus, person status
E419	**19:62**	Diagnosis of diabetic retinopathy and confirmed by diagnosis of diabetes mellitus in Framingham Heart Study examinations 1-12 (See **19:23)**
		0 Negative
		1 One eye positive
		2 **Two** eyes positive
		3 Questionable
		4 Incomplete
E420	**19:75**	Age at Screening Examination (3 classes)
		1 Less than 65
		2 65-74
		3 75 or older
E421	19: 76	Age at Screening Examination (S-year intervals)
		1 Less than 55 (range = 52-54)
		2 **55-59**
		3 60-64
		4 65-69
		5 70-74
		6 75-79
		7 80-84
		8 85 (oldest examinees were 85)

Tape Variable	Card Source (Deck: **Cols**)	Item, Code, and Description
E423	**19: 78**	10% sample member 0 No 1 Yes