



Supplementary Figure 1. Funnel plot for the primary outcome of proportion missed EAC.

Supplementary Table 1. Quality Scoring Scheme

Question	Scoring scheme
Representative of the average adult in the community	1 point for population-based studies 0.5 point for multicenter studies 0 point for a single-center hospital-based study
Large cohort size	1 point for cohort size >200 patients with BE 0.5 point if cohort size 100–200 patients 0 point if cohort size <100 patients
Definition of BE	1 point if by histology and endoscopy 0.5 point if by endoscopy only 0 point if not reported
Baseline histologic characterization of cohort	1 point if consisted of patients with NDBE only 0.5 point for NDBE and BE-LGD only 0 point for NDBE, BE-LGD and BE-HGD
Surveillance protocol	1 point for endoscopy every 3–5 years for patients with NDBE and annually for patients with BE-LGD (or more frequently) 0.5 point for endoscopy greater than every 3–5 years for patients with NDBE and/or greater than 1 year for patients with BE-LGD 0 point for no surveillance or surveillance protocol not reported in study
Adequate biopsy protocol	1 point for 4-quadrant biopsies every 1–2 cm 0.5 point for <4-quadrant biopsies every 1–2 cm 0 point for not reported
Adequate follow-up of cohort for outcome to occur	1 point for mean/median follow-up >8 y 0.5 point for follow-up 5–8 y 0 point for follow-up 2–5 y
Attrition rate	1 point for >90% of cohort followed-up 0.5 point for 80%–90% of cohort followed-up 0 point for >20% lost to follow-up
Method of capturing HGD-EAC diagnosis	1 point for pathology database 0.5 point for clinical database 0 point for not reported

Supplementary Table 2. Characteristics of Included Studies, Categorized by Duration of Follow-Up and Baseline Histology of Cohort

Study, first author, year	Country	Setting	Total no. of BE subjects	No. of subjects under follow-up	Mean age, y	Male, %	Mean BE length, %	LSBE, %	NDBE, %	BE-IND, %	BE-LGD, %	BE-HGD, %	At least 1 repeat EGD, %	Interval for Missed HGD-EAC, mo	Mean follow-up, y
Follow-up ≥5 y															
NDBE and BE-LGD															
Hameeteman, 1989 ⁴⁰	Netherlands	SC	50	50 ^a	59.3	58	NR	100	86	2	10	2	NR	12 ^b	5.2
Spechler, 2001, ³⁶ 1992 ⁶⁸	US	SC	108	108 ^a	NR	NR	NR	100	87	0	13	0	NR	12 ^b	9.6 ^c
Conio, 2003 ²⁹	Italy	MC	177	166 ^a	59.9 ^d	81.3	3.9	64.5	90.4	0	9.6	0	92.8	12 ^b	5.5
Parrilla, 2003 ²⁸	Spain	SC	146	43 ^{a,e}	50 ^d	76.7	4 ^c	NR	90.1	0	7	0	NR	12 ^b	6
Martinek, 2008 ²³	Czech Republic	SC	151	135 ^a	59.4	75.6	2.5	36.3	93.3	0	6.7	0	100	12 ^b	5.2
Bhat, 2011 ²	Ireland	PB	9334	8522	NR	57.9	NR	58.2 ^f	95.4	0.8	3.8	0	33.3	12	7
den Hoed, 2011 ¹⁹	Netherlands	SC	166	133	62.4	54.9	6.5	100	79.7	0	20.3	0	NR	12	14.9
Hvid-Jensen, 2011 ³	Denmark	PB	11,028	11,028 ^a	62.7 ^d	66.8	NR	NR	NR	NR	5.6	0	NR	12	5.2 ^d
NDBE only															
Teodori, 1998 ⁴¹	Italy	SC	30	30 ^a	53	60	NR	NR	100	0	0	0	100	12 ^b	11.7 ^c
Eckardt, 2001 ³⁰	Germany	SC	122	60 ^a	61	58.3	7	100	100	0	0	0	84	12 ^b	10
Gladman, 2006 ²⁵	UK	SC	466	195 ^a	62.9	55.4	NR	NR	100	0	0	0	100	12 ^b	5.5
Vieth, 2006 ²⁴	Germany	SC	1071	748 ^a	60.9	67.8	NR	56.1 ^f	100	0	0	0	100	14 ^b	6.5
Follow-up ≥3 y															
NDBE and BE-LGD															
Spechler, 1984 ³⁵	US	SC	115	107 ^e	NR	NR	NR	NR	59.8	29	3.7	0	73	12 ^b	3.3
Miros, 1991 ³⁴	Australia	SC	133	81 ^a	NR	NR	NR	100	84	0	12.3	3.7	NR	12 ^b	3.6
Williamson, 1991 ³⁸	US	SC	241	176 ^a	56 ^d	63	NR	100	NR	NR	NR	NR	100	12 ^b	3 ^d
Katz, 1998 ³³	US	SC	102	102 ^a	63 ^d	82.4	6 ^c	100	95	0	5	0	100	12 ^b	4.8 ^d
Reid, 2000 ³⁷	US	SC	327	327 ^a	62 ^d	81	NR	NR	39.4	24.2	13.1	23.2	100	12 ^b	3.9
Dulai, 2005 ²⁷	US	MC	650	575	60	99	NR	NR	76.7	0	23.3	0	NR	12	4.8 ^c
Murphy, 2005 ²⁶	Ireland	SC	277	178 ^a	57	71.3	5	81.5	NR	NR	18.5	0	100	12 ^b	3.4
Rossi, 2009 ²²	Italy	SC	21	21 ^a	63 ^d	76.2	4.5 ^c	52.4	61.9	0	33.3	4.8	100	12 ^b	3 ^d
de Jonge, 2010 ²¹	Netherlands	PB	42,207	16,333	62.1 ^d	62.5 ^c	NR	NR	NR	0	NR	0	100	12	4.8 ^c
Vogt, 2010 ²⁰	Switzerland	SC	137	82 ^a	NR	NR	NR	NR	76.8	12.2	11	0	100	12 ^b	3.7 ^d
Kastelein, 2011 ³⁹	Netherlands	MC	786	570	60.4 ^d	72.3	4 ^c	NR	86.1	0	13.9	0	NR	9	4.5 ^d
Rugge, 2012 ⁴²	Italy	MC	1297	841	60 ^d	76.8	2 ^c	42	88.6	3.8	7.6	0	100	12	3.7 ^d
Visrodia, 2015 ⁹	US	PB	488	439 ^a	NR	NR	NR	NR	83.8	5.7	10.5	0	73.3	12 ^b	4.8 ^d
NDBE only															
Bani-Hani, 2000 ³²	UK	SC	597	357	60.9	58	6.1	95.5	100	0	0	0	100	6	3.6
Macdonald, 2000 ³¹	UK	SC	409	143 ^a	57	60.1	8.1	100	100	0	0	0	NR	12 ^b	4.4

BE-IND, Barrett’s esophagus with indefinite dysplasia; EGD, esophagogastroduodenoscopy; LSBE, long-segment Barrett’s esophagus; MC, multicenter; PB, population-based; SC, single-center; UK, United Kingdom; US, United States.

^aIncludes patients subsequently found to have missed HGD or EAC.

^bCutoff retrospectively applied and numbers of missed and incident EAC (or HGD-EAC) ascertained based on provided data.

^cCalculated using provided data.

^dMedian reported where mean not available.

^eIncludes patients with unspecified baseline histology.

^fOf patients with reported BE length.

Supplementary Table 3. Quality of the Studies, Categorized by Baseline Histology of Cohort

Study, first author, year	Representative of the average adult in the community	Definition of BE	Adequacy of surveillance	Adequacy of biopsy protocol	Capture of dysplasia	Cohort size	Cohort baseline dysplasia	Length of follow-up	Attrition rate	Total ^a
Follow-up ≥ 5 y										
NDBE and BE-LGD										
Hameeteman, 1989 ⁴⁰	0	0.5	1	0.5	1	0	0	0.5	0	3.5
Spechler, 2001, ³⁶ 1992 ⁶⁸	0	1	0	0.5	1	0.5	0.5	1	1	5.5
Conio, 2003 ²⁹	0.5	1	1	0.5	1	0.5	0.5	0.5	1	6.5
Parrilla, 2003 ²⁸	0	0.5	1	0.5	1	0	0.5	0	0	3.5
Martinek, 2008 ²³	0	1	1	1	1	0.5	0.5	0.5	1	6.5
Bhat, 2011 ²	1	0.5	0	0	1	1	0.5	0.5	1	5.5
den Hoed, 2011 ¹⁹	0	1	0	0	1	0.5	0.5	1	1	5
Hvid-Jensen, 2011 ³	1	1	0	0	1	1	0.5	0.5	1	6
NDBE only										
Teodori, 1998 ⁴¹	0	1	1	1	1	0	1	1	0	6
Eckardt, 2001 ³⁰	0	1	0.5	0.5	1	0	1	1	1	6
Gladman, 2006 ²⁵	0	1	1	0.5	1	0.5	1	0.5	0.5	6
Vieth, 2006 ²⁴	0	1	0	0.5	1	1	1	0.5	1	6
Follow-up ≥ 3 y										
NDBE and BE-LGD										
Spechler, 1984 ³⁵	0	0.5	0.5	0.5	1	0.5	0.5	0	1	4.5
Miros, 1991 ³⁴	0	1	1	0.5	1	0.5	0	0	1	5
Williamson, 1991 ³⁸	0	1	1	0.5	1	0.5	0	0	1	5
Katz, 1998 ³³	0	1	1	1	1	0.5	0.5	0	1	6
Reid, 2000 ³⁷	0	1	1	0.5	1	1	0	0	0	4.5
Dulai, 2005 ²⁷	0.5	1	0	0	1	1	0.5	0	1	5
Murphy, 2005 ²⁶	0	1	1	0	1	0.5	0.5	0	1	5
Rossi, 2009 ²²	0	1	1	1	1	0	0	0	1	5
de Jonge, 2010 ²¹	1	1	0	0	1	1	0.5	0	1	5.5
Vogt, 2010 ²⁰	0	1	1	1	1	0	0.5	0	1	5.5
Kastelein, 2011 ³⁹	0.5	1	1	1	1	1	0.5	0	1	7
Rugge, 2012 ⁴²	0.5	1	1	1	1	1	0.5	0	0	6
Visrodia, 2015 ⁹	1	1	0.5	0.5	1	1	0.5	0	0	5.5
NDBE only										
Bani-Hani, 2000 ³²	0	0.5	0	0	0	1	1	0	1	3.5
Macdonald, 2000 ³¹	0	1	1	0.5	1	0.5	1	0	0.5	5.5

^aMaximum = 9; high quality >6; medium quality 5–6; low quality <5.

Supplementary Table 4. Additional Extraction of Outcomes for Subjects With NDBE Only From Studies With Cohorts Composed of Subjects With Baseline NDBE, BE-LGD, and/or BE-HGD

Study	EAC		HGD-EAC	
	Missed	Incident	Missed	Incident
NDBE only				
Follow-up ≥ 5 y				
Hameeteman, 1989 ⁴⁰	0	2	NR	NR
Conio, 2003 ²⁹	0	3	0	3
Parrilla, 2003 ²⁸	0	1	NR	NR
Martinek, 2008 ²³	0	2	0	2
Follow-up ≥ 3 y				
Miros, 1991 ³⁴	0	0	0	0
Williamson, 1991 ³⁸	0	4	0	4
Reid, 2000 ³⁷	0	5	NR	NR
Rossi, 2009 ²²	0	2	0	2
Visrodia, 2015 ⁹	0	7	1	11

Supplementary Table 5. Sensitivity Analysis to Examine Sources of Heterogeneity for Studies With at Least 5 Years Follow-Up

Subgroup analysis	No. of studies	Total cases	Missed			Incident			Heterogeneity I^2 , %	Heterogeneity between groups, P value ^a
			n	Pooled weighted proportion	95% CI	n	Pooled weighted proportion	95% CI		
Study quality									0.56	
EAC										
High	2	7	0	11.7	1.6–51.8	7	88.3	48.2–98.4	0	
Medium	6	226	136	28.8	10.3–58.8	90	71.2	41.2–89.7	72	
Low	2	6	0	12.8	1.8–54.8	6	87.2	45.2–98.2	0	
HGD-EAC									0.10	
High	2	7	0	11.7	1.6–51.8	7	88.3	48.2–98.4	—	
Medium	7	681	400	44.9	31.8–58.8	281	55.1	41.2–68.2	77	
Low	0	—	—	—	—	—	—	—	—	
Study design										
EAC									< 0.01	
Population-based	1	197	131	66.5	59.6–72.7	66	33.5	27.3–40.4	—	
Other	9	42	5	20.3	10.7–35.0	37	79.7	65.0–89.3	0	
HGD-EAC									< 0.01	
Population-based	2	638	392	61.8	53.7–69.3	246	38.2	30.7–46.3	77	
Other	7	50	8	20.4	11.2–34.2	42	79.6	65.8–88.8	0	
Study setting										
EAC									0.61	
Multicenter	2	202	131	37.6	3.1–92.0	71	62.4	8.0–96.9	77	
Single-center	8	37	5	21.5	11.2–37.3	32	78.5	62.7–88.8	0	
HGD-EAC									< 0.01	
Multicenter	3	643	392	60.4	50.1–70.0	251	39.6	30.0–49.9	75	
Single-center	6	45	8	21.4	11.6–36.2	37	78.6	63.8–88.4	0	
Study region										
EAC									0.52	
Europe	9	235	136	23.7	9.2–48.6	99	76.3	51.4–90.8	68	
United States	1	4	0	10.0	0.6–67.4	4	90.0	32.6–99.4	—	
HGD-EAC									NA	
Europe	9	688	400	41.1	28.4–55.2	288	58.9	44.8–71.6	—	
United States	0	—	—	—	—	—	—	—	—	
Publication date										
EAC									< 0.01	
Before 2000	2	8	0	10.0	1.4–46.7	8	90.0	53.3–98.6	0	
2000–2009	7	34	5	22.4	11.4–39.1	29	77.6	60.9–88.6	0	
After 2010	1	197	131	66.5	59.6–72.7	66	33.5	27.3–40.4	—	
HGD-EAC									< 0.01	
Before 2000	1	5	0	8.3	0.5–62.2	5	91.7	37.8–99.5	—	
2000–2009	5	30	6	24.7	12.4–43.1	24	75.3	56.9–87.6	0	
After 2010	3	653	394	56.1	42.8–68.5	259	43.9	31.5–57.2	85	
Duration of follow-up, y										
EAC									0.32	
3–5	NA	—	—	—	—	—	—	—	—	
5–8	7	229	136	26.8	9.9–55.0	93	73.2	45.0–90.1	70	
≥8	3	10	0	11.8	2.4–42.5	10	88.2	57.5–97.6	0	
HGD-EAC									< 0.01	
3–5	NA	—	—	—	—	—	—	—	—	
5–8	6	666	398	52.3	40.0–64.2	268	47.7	35.8–60.0	71	
≥8	3	22	2	12.8	4.2–33.0	20	87.2	67.0–95.8	0	

NA, not applicable.

^a $P \leq .10$, explains source of heterogeneity between groups and appear in bold.