Appendix 2: Supplementary tables [posted as supplied by author]

Table A. Study characteristics of all the studies included in meta-analysis

Study	Country/ Region	Prediabetes definition and prevalence (%)	Sample size (% women)	Age (y), average (range or SD)	Follow-up (y)	Baseline CVD excluded	Events for analysis	Possibility of enrolling patients with diabetes
Stengard 1992 [28]	Finland	IGT (36.7%)	637 (0%)	72.4 (65-84)	5	No	CVD mortality All-cause mortality	Yes
Barzilay 1999 [29]	United States	IFG-WHO (14.6%) IGT (32.1%)	4515 (58%)	73 (5.6)	8	Yes	CVD incidence	No
DECODE 2001 [30]	Europe	IFG-WHO (10.1%) IGT (11.4%)	22514 (31.7%)	53 (30-89)	8.8	No	CVD mortality CHD mortality All-cause mortality	No
Mazza 2001 [31]	Italy	IFG-WHO (NA)	3282 (61.0%)	73.8 (≥65)	14	No	Stroke mortality	Yes
Saydah 2001 [32]	United States	IFG-WHO (NA) IGT (17.0%)	3092 (54.3%)	49.6 (30-74)	13.5	No	CVD mortality All-cause mortality	No
Henry 2002 [33]	France	IFG-WHO (17.0%)	63443 (0%)	NA (21-60)	8	Yes	CVD mortality All-cause mortality	Yes
Rodriguez 2002 [34]	Japan	IFG-WHO (22.4%) IGT (26.7%)	2034 (0%)	NA (71-93)	7	Yes	CVD mortality All-cause mortality	No
Lu 2003 [35]	United States	IFG-WHO (10.8%)	4304 (56.1%)	56.1 (45-74)	9	No	CVD mortality All-cause mortality	Yes
Hunt 2004 [36]	United States	IFG-WHO (2.2 %)	2815 (56.9%)	43.4 (25-46)	12.7	Yes	CVD mortality All-cause mortality	Yes
Nakagami 2004 [37]	Asia	IFG-WHO (6.8%) IGT (16.2%)	6817 (54.2%)	50 (30-89)	5	No	CVD mortality All-cause mortality	No
Nakanishi 2004 [38]	Japan	IFG-WHO (4.0%)	6182 (0%)	47.5 (35-59)	7	Yes	CVD incidence	Yes
Tai 2004 [39]	Singapore	IFG-ADA (18.3%)	5091 (NA)	37.2 (12)	9.1	Yes	CHD incidence	No
Tai 2004 [39]	Singapore	IGT (13.1%)	3568 (NA)	NA	8	Yes	CVD incidence CHD incidence	No
Hiltunen 2005 [40]	Finland	IGT (34.0%)	379 (62.8%)	76 (NA)	9.8	No	All-cause mortality	No

Study	Country/ Region	Prediabetes definition and prevalence (%)	Sample size (% women)	Age (y), average (range or SD)	Follow-up (y)	Baseline CVD excluded	Events for analysis	Possibility of enrolling patients with diabetes
McNeill 2005 [41]	United States	IFG-WHO (12.3%)	12089 (56.9%)	54 (45-64)	11	Yes	CHD incidence	Yes
Wild 2005 [42]	UK	IFG-WHO (11.9%) IGT (8.3%)	1496 (49.3%)	64.8 (55-74)	12.6	No	CVD mortality All-cause mortality	No
Kaarisalo 2006 [43]	Finland	IGT (12.3%)	1032 (52.1%)	70 (NA)	9.6	No	Ischaemic stroke	No
McNeill 2006 [44]	United States	IFG-ADA (45.5%) IFG-WHO (16.5%)	3585 (62%)	72 (65-92)	11	Yes	CHD incidence	Yes
Palmieri 2006 [45]	Italy	IFG-WHO (7.7%)	20447 (63.6%)	50.4 (35-69)	10.4	No	CHD incidence	Yes
Barr 2007 [46]	Australia	IFG-WHO (5.8%) IGT (12.4%)	10428 (54.8%)	51.4 (≥25)	5.2	No	CVD mortality All-cause mortality	No
Liu 2007 [8]	China	IFG-ADA (21.1%)	30378(46.5%)	46.9 (35-64)	10	Yes	CVD incidence CHD incidence Stroke incidence	Yes
Nilsson 2007 [47]	Sweden	IFG-WHO (14%)	5047 (66%)	57.5 (46-68)	10.7	Yes	CVD incidence	Yes
Pankow 2007 [48]	United States	IFG-ADA (42%) IGT (31%) IFG-ADA and IGT (17%)	6888 (47%)	62.3(52-75)	6.3	Yes	CHD incidence All-cause mortality	No
Rijkelijkhuizen 2007 [10]	Netherlands	IFG-ADA (33.2%) IFG-WHO (10.1%)	1428 (46%)	60.5 (50-75)	6.4	No	CVD mortality All-cause mortality	No*
Wang 2007 a [49]	Finland	IFG-ADA (NA) IFG-WHO (NA) IGT (NA)	1025 (63.2%)	NA (65-74)	13.5	No	CVD mortality	No
Wang 2007 [50]	China	IFG-ADA (56.5%) IFG-WHO (28.3%) IGT (24.6%)	541 (43.4%)	47.8 (≥25)	5	Yes	CHD incidence	No
Chien 2008 [51]	China	IFG-WHO (NA) IGT (NA)	2165(56%)	54.2 (≥35)	10.5	Yes	CVD incidence	No
Jin 2008 [52] †	China	IFG-ADA (11.4%)	1911 (0%)	72.5 (6.0)	9.5	No	CVD mortality All-cause mortality	Yes
Kim 2008 [53]	India	IFG-ADA (10%)	2993 (58%)	43 (≥35)	10.4	No	CHD mortality	No

Study	Country/ Region	Prediabetes definition and prevalence (%)	Sample size (% women)	Age (y), average (range or SD)	Follow-up (y)	Baseline CVD excluded	Events for analysis	Possibility of enrolling patients with diabetes
		IGT (5.5%)						
		IFG-ADA and IGT (7.7%)						
Levitzky 2008 [11]	United States	IFG-ADA (NA)	4058 (53.3%)	48.5 (10)	4	Yes	CVD incidence	Yes
		IFG-WHO (NA)					CHD incidence	
Oizumi 2008 [54]	Japan	IGT (12.3%)	2938 (56.1%)	57.2 (11)	9.7	Yes	CVD incidence	No
		IFG-WHO (5.8%)					CHD incidence	
							Stroke incidence	
Tsai 2008 [55]	China	IFG-WHO (6.9%)	35259 (34.2%)	50.9 (≥40)	15	Yes	CVD mortality	Yes
							All-cause mortality	
Wannamethee 2008 [56]	UK	IFG-WHO (NA)	5128 (0%)	NA (40-59)	20	Yes	CHD incidence	Yes
Hyvarinen 2009 [57]	Finland	IFG-WHO (17.3%)	18360 (54.4%)	55.2 (25-90)	12.9	Yes	Stroke incidence	No
	Sweden	IGT (21.9%)						
Sung 2009 [58]	Korea	IFG-ADA (13.4%)	652901 (0%)	43 (30-64)	8.8	Yes	Stroke incidence	Yes
		IFG-WHO (3.9%)						
Doi 2010 [59]	Japan	IFG-ADA (NA)	2421(57%)	57.6 (40-79)	14	Yes	CHD incidence	No
		IFG-WHO (NA)					Ischemic stroke	
		IGT (NA)						
Khang 2010 [12]	Korea	IFG-ADA (32%)	9791 (55.2%)	43.2 (15)	5.8	Yes	CVD incidence	Yes
							CHD incidence	
							Stroke incidence	
Kokubo 2010 [60]	Japan	IFG-ADA (28%)	5321 (53%)	55 (30-79)	11.7	Yes	CVD incidence	Yes
							CHD incidence	
							Stroke incidence	
Magliano 2010 [61]	Mauritius	IFG-WHO (5.7%)	9559 (NA)	54.4 (20-82)	15.1	No	CVD mortality	No
		IGT (20.6%)					All-cause mortality	
Skriver 2010 [62]	Denmark	HbA1c-NICE (4.1%)	25184 (53.0%)	54.9 (40-69)	6.8	No	All-cause mortality	No*
Sui 2011 [63]	United States	IFG-WHO (12.8%)	43,933(0)	44.3 (9.9)	17.7	Yes	Stroke incidence	Yes
							Stroke mortality	
Yeboah 2011 [64]	United States	IFG-ADA (13.9%)	6753 (52.9%)	62.2 (45-84)	7.5	Yes	CVD incidence	Yes

Study	Country/ Region	Prediabetes definition and prevalence (%)	Sample size (% women)	Age (y), average (range or SD)	Follow-up (y)	Baseline CVD excluded	Events for analysis	Possibility of enrolling patients with diabetes
Ma 2012 [65]	Korea	IFG-ADA (15.9%)	16048 (60%)	55.7 (≥20)	9.4	No	CHD incidence Stroke incidence All-cause mortality CVD mortality	Yes
Deedwania 2013 [66]	United States	IFG-ADA (47%)	4602(57%)	73 (≥65)	13	No	CHD mortality Stroke mortality CVD mortality All-cause mortality	No*
Kim 2013 [67]	Korea	IFG-ADA (17.7%)	408,022 (39.3%)	45.5 (≥20)	9.4	Yes	CHD incidence Stroke incidence CVD incidence CHD incidence Stroke incidence	Yes
Laukkanen 2013 [9]	Finland	IFG-ADA (20.1%)	2641 (0%)	52.9 (40-62)	18.8	No	CVD mortality All-cause mortality	Yes
Onat 2013 [68]	Turky	IFG-WHO (5.9%) IGT (4.7%)	2619 (51.3%)	47.8 (11.8)	7.2	Yes	CHD incidence	No
Schöttker 2013 [69]	German	IFG-ADA (21.6%) HbA1c-ADA (37.3%)	8365 (55.1%)	62 (50-74)	7.9	Yes	CVD incidence	Yes
Selvin 2014 [70]	United States	IFG-ADA (48.7%) HbA1c-ADA (23.1%)	9051 (58.4%)	56.6 (5.6)	6	Yes	CVD incidence All-cause mortality	Yes
Eastwood 2015 [71]	South Asia Europe	HbA1c-ADA (31.9%) HbA1c-NICE (10.7%)	2475 (16.2%)	52 (40-69)	20	Yes	CVD incidence CHD incidence Stroke incidence	No
Gordon-Dseagu 2015 [72]	UK	HbA1c-ADA (24%)	22106 (54%)	52 (17.7)	7	No	All-cause mortality CVD mortality	Yes
Paprott 2015 [73]	German	HbA1c-ADA (27.8%)	6,299 (49%)	45.5 (18-79)	11.6	Yes	All-cause mortality	Yes

Study	Country/ Region	Prediabetes definition and prevalence (%)	Sample size (% women)	Age (y), average (range or SD)	Follow-up (y)	Baseline CVD excluded	Events for analysis	Possibility of enrolling patients with diabetes
Samaras 2015 [74]	Australia	IFG-ADA (40.7%) IFG-WHO (NA)	945 (54%)	78.6 (4.7)	2	No	All-cause mortality CHD incidence Stroke incidence	Yes
Kim 2016 [75]	Korea	IFG-ADA (26.4%) HbA1c-ADA (19.3%)	76434 (42.8%)	47.5 (10.5)	3.1	Yes	CVD incidence CHD incidence Stroke incidence All-cause mortality	Yes

* OGTT was performed inthis study to exclude diabetes; † article in Chinese

CHD=coronary heart disease; CVD=cardiovascular disease; DECODE=Diabetes Epidemiology: Collaborative analysis Of Diagnostic criteria in Europe; HDL-C= high-density lipoprotein cholesterol; HbA1c-ADA=prediabetes defined as raised HbA1c according to the American Diabetes Association criteria (39-47 mmol/mol); HbA1c-NICE=prediabetes defined as raised HbA1c according to the NICE guidance (42-47 mmol/mol); IFG-ADA=impaired fasting glucose according to the American Diabetes Association criteria (fasting plasma glucose of 5.6-6.9 mmol/L); IFG-WHO=impaired fasting glucose according to the World Health Organization criteria (fasting plasma glucose of 6.1-6.9 mmol/L); IGT=impaired glucose tolerance; NA=not available; SD=standard deviation

Table B. Quality Assessment of the Included Studies

Study	Selection (stars awarded)	Comparability (stars awarded)	Outcome (stars awarded)	Quality (total stars awarded)
Stengard 1992 [28]	3	2	3	Good (8)
Barzilay 1999 [29]	4	2	1	Good (7)
DECODE 2001 [30]	3	2	3	Good (8)
Mazza 2001 [32]	3	1	2	Fair (6)
Saydah 2001 [32]	3	2	3	Good (8)
Henry 2002 [33]	4	2	3	Good (9)
Rodriguez 2002 [34]	4	2	2	Good (8)
Lu 2003 [35]	3	2	3	Good (8)
Hunt 2004 [36]	4	1	3	Good (8)
Nakagami 2004 [37]	3	2	2	Good (7)
Nakanishi 2004 [38]	4	2	2	Good (8)
Tai 2004 [39]	4	1	2	Good (7)
Hiltunen 2005 [40]	3	2	2	Good (7)
McNeill 2005 [41]	3	2	2	Good (7)
Wild 2005 [42]	3	1	3	Good (7)
Kaarisalo 2006 [43]	4	1	2	Good (7)
McNeill 2006 [44]	4	1	3	Good (8)
Palmieri 2006 [45]	3	2	2	Good (7)
Barr 2007 [46]	4	1	2	Good (7)
Liu 2007 [8]	4	1	3	Good (8)
Nilsson 2007 [47]	4	2	2	Good (8)
Pankow 2007 [48]	3	1	3	Good (7)
Rijkelijkhuizen 2007 [10]	3	1	2	Fair (6)
Wang 2007 a [49]	4	1	3	Good (8)
Wang 2007 [50]	4	1	2	Good (7)
Chien 2008 [51]	3	2	2	Good (7)
Jin 2008 [52]	3	1	2	Fair (6)

Study	Selection (stars awarded)	Comparability (stars awarded)	Outcome (stars awarded)	Quality (total stars awarded)
Kim 2008 [53]	4	2	2	Good (8)
Levitzky 2008 [11]	4	1	2	Good (7)
Oizumi 2008 [54]	2	1	2	Fair (5)
Tsai 2008 [55]	2	1	2	Fair (5)
Wannamethee 2008 [56]	4	1	2	Good (7)
Hyvarinen 2009 [57]	4	2	2	Good (8)
Sung 2009 [58]	4	2	2	Good (8)
Doi 2010 [59]	4	2	2	Good (8)
Khang 2010 [12]	4	2	2	Good (8)
Kokubo 2010 [60]	4	2	3	Good (9)
Magliano 2010 [61]	3	1	2	Fair (6)
Skriver 2010 [62]	3	2	2	Good (7)
Sui 2011 [63]	4	2	2	Good (8)
Yeboah 2011 [64]	4	2	3	Good (9)
Ma 2012 [65]	3	1	2	Fair (6)
Deedwania 2013 [66]	4	2	2	Good (8)
Kim 2013 [67]	4	2	2	Good (8)
Laukkanen 2013 [9]	3	2	2	Good (7)
Onat 2013 [68]	4	2	2	Good (8)
Schöttker 2013 [69]	4	2	3	Good (9)
Selvin 2014 [70]	4	2	3	Good (9)
Eastwood 2015 [71]	4	2	2	Good (8)
Gordon-Dseagu 2015 [72]	3	1	2	Fair (6)
Paprott 2015 [73]	4	2	2	Good (8)
Samaras 2015 [74]	3	2	1	Fair (6)
Kim 2016 [75]	4	2	1	Good (7)

Table C. Confounders Adjusted and Quality Assessment of the Included Studies

Study	Confounder adjusted	Adequate adjustment†
Stengard 1992 [28]	Age, BMI, hypertension, smoking, TC, HDL-C and functional capacity	Yes
Barzilay 1999 [29]	Age, sex, ethnic group, smoking, BMI, LDL-C and hypertension.	Yes
DECODE 2001 [30]	Age, sex, center, TC, BMI, SBP, smoking	Yes
Mazza 2001 [32]	Age, historical stroke and CHD, hypertension, SBP, pulse pressure, atrial fibrillation, LV hypertrophy, uric acid, smoking and serum potassium and sodium	No
Saydah 2001 [32]	Age, sex, race, education, smoking, physical activity , BMI, SBP, TC:HDL-C ratio	Yes
Henry 2002 [33]	Age, TC, TG, BMI, smoking and BP	Yes
Rodriguez 2002 [34]	Age, BMI, waist-to-hip ratio, physical activity, hypertension, TG, HDL-C, fibrinogen	Yes
Lu 2003 [35]	Age, sex, BMI, physical activity, study center, smoking, alcohol consumption, hypertension, insulin, TC, HDL-C, and TG.	Yes
Hunt 2004 [36]	Age, gender, and ethnic group	No
Nakagami 2004 [37]	Age, sex, cohort, BMI, SBP, TC and smoking.	Yes
Nakanishi 2004 [38]	Age, family history of diabetes, alcohol consumption, cigarette smoking, and all other components of the metabolic syndrome	Yes
Tai 2004 [39]	Age, sex, ethnicity	No
Hiltunen 2005 [40]	Age, gender, presence of CVD, hypertension, BMI, smoking, physical activity and self-perceived health	Yes
McNeill 2005 [41]	Age, sex, hypertension, TC:HDL-C ratio, TG, smoking, baseline CVD.	Yes
Wild 2005 [42]	Sex, previous stroke/TIA, perceived health status, hypertension, BP, angina pectoris, previous MI, cardiac failure, atrial fibrillation, claudication, acetysalisylic acid in use, smoking	No
Kaarisalo 2006 [43]	Age, sex, race	No
McNeill 2006 [44]	Age, sex, center	No
Palmieri 2006 [45]	Age, sex, previously CVD, smoking, hypertension, waist circumference, lipid-lowering medication use, and TC: HDL-C ratio.	Yes
Barr 2007 [46]	Age, sex, smoking, CVD family history, and TC	No
Liu 2007 [8]	Age, sex	No
Nilsson 2007 [47]	Age, sex, race, center, smoking, hypertension, LDL-C, HDL-C, TG, lipid-lowering medications, BMI, and waist circumference.	Yes

Study	Confounder adjusted	Adequate adjustment†
Pankow 2007 [48]	Age, sex	No
Rijkelijkhuizen 2007 [10]	Age, sex, history of MI and stroke, current smoking, consumption of alcohol, physical activity and TC.	No
Wang 2007 a [49]	Age, sex, education, occupation, smoking, diabetic family history, and TC	No
Wang 2007 [50]	Age, sex, BMI, smoking, alcohol, marital status, education, occupation, exercise, family history of CHD	No
Chien 2008 [51]	Age, post load plasma glucose, BMI, SBP, DBP, HDL-C, TC, TG	Yes
Jin 2008 [52]	Age, sex	No
Kim 2008 [53]	Age, sex, SBP, hypertension treatment, TC/HDL ratio, smoking, and BMI	Yes
Levitzky 2008 [11]	Age, sex, hypertension	No
Oizumi 2008 [54]	Age, gender, and smoking status	No
Tsai 2008 [55]	Age, gender, and smoking status	No
Wannamethee 2008 [56]	Age, smoking, social class, physical activity and alcohol intake	No
Hyvarinen 2009 [57]	Age, sex, center, mean arterial pressure, BMI, TC, smoking	Yes
Sung 2009 [58]	Age, height, smoking, alcohol consumption, regular exercise, level of monthly salary, area of residence, BP, TC, and BMI.	Yes
Doi 2010 [59]	Age, sex, SBP, electrocardiogram abnormalities, BMI, TC, HDL-C, smoking, alcohol intake, and regular exercise.	Yes
Khang 2010 [12]	Age, sex, central obesity, hypertriglyceridemia, HDL-C, hypertension	Yes
Kokubo 2010 [60]	Age, sex, BMI, hypertension, hyperlipidemia, and smoking and drinking status	Yes
Magliano 2010 [61]	Prior CVD, education, sex, hypertension, waist and hip circumference, smoking, HDL-C, TG, and TC.	No
Skriver 2010 [62]	Age, sex, BMI, smoking, SBP, history of ischaemic heart disease, cerebrovascular disease and cancer	Yes
Sui 2011 [63]	Age, year of examination, smoking, alcohol intake, family history of CVD, and survey indicator, BMI, TC, abnormal ECG, and hypertension.	Yes
Yeboah 2011 [64]	Age, sex, race/ethnicity, BMI, SBP, TC, HDL-C, TG, smoking, BP medications and statin use.	Yes
Ma 2012 [65]	Age, sex, educational, alcohol consumption, history of hypertension and BMI	No
Deedwania 2013 [66]	Age, sex, race/ethnicity, married, education, income, BMI, activities of daily living, smoking, alcohol use, ankle arm index ratio, hemoglobin, TC, albumin, uric acid, C-reactive protein, serum insulin, LV hypertrophy, atrial fibrillation, bundle branch block, LV systolic dysfunction, chronic	Yes

Study	Confounder adjusted	Adequate adjustment†
	disease and medicine	
Kim 2013 [67]	Age, SBP, antihypertensive medication, LDL-C, HDL-C, current smoking, BMI, and family history of CVD.	Yes
Laukkanen 2013 [9]	Age, BMI, SBP, LDL-C, smoking, alcohol consumption, prevalent CHD, and family history of CHD	Yes
Onat 2013 [68]	Age, sex, SBP, non-HDL-C, waist circumference, smoking, and C-reactive protein	Yes
Schöttker 2013 [69]	Age, sex, SBP, current smoking and TC/HDL-C ratio	Yes
Selvin 2014 [70]	Age, sex, race-center, BMI, C-reactive protein, smoking, SBP, LDL-C, HDL-C, TG, estimated glomerular filtration rate, current use of hypertension medication, current lipid-lowering medication use, alcohol use and left ventricular hypertrophy.	Yes
Eastwood 2015 [71]	Age, sex, smoking, total-to-HDL cholesterol ratio, waist-to-hip ratio, SBP, antihypertensive treatment.	Yes
Gordon-Dseagu 2015 [72]	Age, sex, smoking, BMI, socioeconomic status	No
Paprott 2015 [73]	Age, sex, educational level, smoking, sport activity, alcohol consumption, BMI, waist circumference, history of myocardial infarction, stroke, or cancer, and history of hypertension or hyperlipidemia	Yes
Samaras 2015 [74]	Age, sex, hypertension, BMI, smoking	Yes
Kim 2016 [75]	Age, sex, hypertension, LDL-C, HDL-C, smoking, family history of CVD, and BMI	Yes

†Adequate adjustment denoted adjustment of at least five of six confounders including sex, age, hypertension or blood pressure or antihypertensive treatment, body mass index or other measure of overweight/obesity, cholesterol, and smoking

BMI: body mass index; BP: blood pressure; HDL-C: high-density lipoprotein cholesterol; LDL-C: low-density lipoprotein cholesterol; LV: left ventricular; CHD: coronary heart disease; CVD: cardiovascular disease; MI: myocardial infarction; SBP: systolic blood pressure; TC: total cholesterol; TG: triglycerides

Table D. Definition of composite cardiovascular disease in the Included Studies

Study	Definition of composite cardiovascular disease
Stengard 1992 [28]	CHD and stroke
Barzilay 1999 [29]	CHD and stroke
DECODE 2001 [30]	ICD-9 codes: 401-448
Saydah 2001 [32]	ICD-9 codes: 401-448
Henry 2002 [33]	ICD-9 codes: 390-459
Rodriguez 2002 [34]	CHD, stroke and sudden death
Lu 2003 [35]	ICD-9 codes: 390-448
Hunt 2004 [36]	ICD-9 codes: 401-405, 410-414, 420-429 (with the exception of 427.5), 430-439, or 440-447 .
Nakagami 2004 [37]	ICD-9 codes: 401-448
Nakanishi 2004 [38]	CHD and stroke
Tai 2004 [39]	ICD-9 codes: 401-448
Wild 2005 [42]	ICD-9 codes: 410-414, 430-438, 440-445 and ICD-10 codes: I21-25, I60-73
Barr 2007 [46]	ICD-10 codes: I10-I25, I46.1, I48, I50-I99, or R96
Liu 2007 [8]	CHD, stroke and sudden death
Nilsson 2007 [47]	ICD-9 codes: 410-414, 430, 431, 434, 436
Rijkelijkhuizen 2007 [10]	ICD-9 codes: 390-459, 798
Wang 2007 a [49]	ICD-9 codes: 390-459
Chien 2008 [51]	CHD and stroke
Jin 2008 [52] †	CHD death, sudden death, stroke death,
Levitzky 2008 [11]	CHD, stroke, transient ischemic attack (TIA), intermittent claudication, congestive heart failure, or CVD death
Oizumi 2008 [54]	CHD and stroke
Tsai 2008 [55]	ICD-9 codes: 390-459
Khang 2010 [12]	ICD-10 codes: I20-I25, I60-I69
Kokubo 2010 [60]	CHD and stroke
Magliano 2010 [61]	Deaths categorized as cardiac, cerebrovascular, hypertension, or renal failure the primary cause
Yeboah 2011 [64]	MI, definite angina, probable angina (if followed by coronary artery bypass grafting and percutaneous coronary intervention), resuscitated cardiac arrest, stroke, stroke death, CHD death or other CVD death
Ma 2012 [65]	ICD-10 codes: I00-I99
Deedwania 2013 [66]	MI, angina pectoris, stroke, and peripheral artery disease.
Kim 2013 [67]	ICD-10 codes: I10-I15, I20-I25, I44-I51, I60-69, I70-I74, R96),
Laukkanen 2013 [9]	ICD-9 codes: 798
Selvin 2014 [68]	CHD and stroke
Schöttker 2013 [69]	MI, stroke or cardiovascular death (ICD-10 codes: I00-I99).
Eastwood 2015 [71]	CHD and stroke
Gordon-Dseagu 2015 [72]	ICD-9 codes:390–459; ICD-10 codes:I00-I99
Kim 2016 [75]	Cardiovascular death (ICD-10 codes: I00-99 and R96), MI, stroke, coronary revascularization, hospitalization or outpatient visit with ischemic heart disease, other vascular disease, or congestive heart failure.

CHD: coronary heart disease; CVD: cardiovascular disease; ICD: International Classification of Diseases; MI: myocardial infarction

Table E. Subgroup Analyses of the Association between Prediabetes and All-Cause Mortality

Subgroups	IFG-ADA			IFG-WHO			IGT		
	No of studies	RR (95% CI)	P *	No of studies	RR (95% CI)	P *	No of studies	RR (95% CI)	P *
Ethnicity			0.36			0.79			0.89
Asians	2	1.24 (1.01, 1.53)		3	1.14 (1.02, 1.27)		3	1.30 (1.08, 1.56)	
Non-Asians	7	1.11 (0.98, 1.25)		10	1.16 (1.03, 1.31)		8	1.32 (1.23, 1.41)	
Sex			-			0.68			0.63
Male	2	1.28 (1.11, 1.46)		4	1.14 (1.03, 1.26)		5	1.34 (1.21, 1.48)	
Female	0	-		2	1.07 (0.79, 1.44)		4	1.28 (1.11, 1.48)	
Participant's average age			0.009			0.88			0.07
<55 years	3	1.28 (1.13, 1.46)		7	1.12 (1.05, 1.21)		5	1.36 (1.26, 1.47)	
≥55 years	6	1.04 (0.96, 1.13)		5	1.15 (0.91, 1.45)		5	1.19 (1.04, 1.35)	
Follow-up duration			0.86			0.38			0.47
<10 years	7	1.12 (0.99, 1.27)		8	1.21 (1.04, 1.41)		7	1.34 (1.24, 1.44)	
≥10 years	2	1.15 (0.91, 1.46)		5	1.12 (1.01, 1.23)		4	1.27 (1.13, 1.42)	
Possibility of enrolling patients with diabetes			0.35			0.65			0.64
None	3	1.08 (0.89, 1.31)		9	1.13 (1.02, 1.25)		10	1.32 (1.23, 1.41)	
Might enrolled	6	1.20 (1.08, 1.34)		4	1.17 (1.05, 1.31)		1	1.17 (0.71, 1.93)	
Exclusion of individuals with baseline CVD			0.14			0.73			0.87
Yes	4	1.02 (0.86, 1.19)		4	1.17 (1.05, 1.30)		2	1.34 (1.0, 1.81)	
No	5	1.19 (1.03, 1.38)		9	1.13 (1.02, 1.27)		9	1.31 (1.23, 1.4)	
Adjustment of confounders			0.11			0.81			0.91
Adequate†	8	1.09 (1.02, 1.18)		9	1.14 (1.04, 1.25)		10	1.32 (1.23, 1.41)	
Not adequate	1	1.41 (1.04, 1.91)		4	1.17 (0.98, 1.39)		1	1.30 (1.11, 1.53)	

IFG-ADA=impaired fasting glucose according to the American Diabetes Association definition (fasting glucose 5.6-6.9 mmol/L); IFG-WHO=impaired fasting glucose according to the World Health Organization definition (fasting glucose 6.1-6.9 mmol/L); IGT=impaired glucose tolerance

* For heterogeneity among subgroups.

† Adequate adjustment denoted adjustment of at least five of six confounders including sex, age, hypertension or blood pressure or antihypertensive treatment, body mass index or other measure of overweight/obesity, cholesterol, and smoking

Table F: Subgroup Analyses of the Association between Prediabetes and Risk of Composite Cardiovascular Diseases

Subgroups	IFG-ADA			IFG-WHO			IGT		
	No of studies	RR (95% CI)	P*	No of studies	RR (95% CI)	P*	No of studies	RR (95% CI)	P*
Ethnicity			0.65			0.92			0.74
Asians	7	1.11 (1.01, 1.26)		6	1.24 (0.97, 1.58)		5	1.33 (1.12, 1.58)	
Non-Asians	8	1.15 (1.04, 1.27)		12	1.26 (1.10, 1.43)		8	1.29 (1.17, 1.42)	
Sex			0.40			0.91			0.66
Male	8	1.09 (1.01, 1.18)		6	1.17 (1.03, 1.33)		4	1.34 (1.17, 1.53)	
Female	7	1.18 (1.00, 1.39)		3	1.19 (0.86, 1.65)		3	1.27 (1.04, 1.55)	
Participant's average age			0.49			0.78			0.98
<55 years	6	1.11 (1.01, 1.21)		9	1.27 (1.04, 1.55)		6	1.29 (1.16, 1.44)	
≥55 years	9	1.16 (1.04, 1.30)		8	1.22 (1.04, 1.44)		6	1.29 (1.13, 1.46)	
Follow-up duration			0.15			0.54			0.87
<10 years	10	1.08 (1.01, 1.15)		10	1.22 (1.02, 1.44)		8	1.31 (1.18, 1.44)	
≥10 years	5	1.22 (1.05, 1.41)		8	1.31 (1.12, 1.52)		5	1.29 (1.12, 1.48)	
Possibility of enrolling patients with diabetes			0.19			0.31			0.65
None	2	1.31 (1.04, 1.65)		12	1.22 (1.05, 1.42)		12	1.30 (1.20, 1.42)	
Might enrolled	12	1.12 (1.04, 1.20)		6	1.36 (1.08, 1.57)		1	1.13 (0.62, 2.06)	
Exclusion of individuals with baseline CVD			0.22			0.1			0.74
Yes	9	1.10 (1.03, 1.18)		9	1.38 (1.23, 1.55)		5	1.27 (1.09, 1.49)	
No	6	1.27 (1.02, 1.58)		9	1.15 (0.97, 1.38)		8	1.31 (1.19, 1.45)	
CVD endpoint			0.22			0.22			0.90
CVD incidence	9	1.10 (1.03, 1.18)		5	1.39 (1.16, 1.68)		4	1.29 (1.11, 1.50)	
CVD mortality	6	1.27 (1.02, 1.58)		13	1.20 (1.05, 1.38)		9	1.30 (1.18, 1.44)	
Adjustment of confounders			0.05			0.13			0.34
Adequate†	11	1.09 (1.02, 1.18)		10	1.16 (0.98, 1.37)		8	1.26 (1.14, 1.40)	
Not adequate	4	1.26 (1.12, 1.43)		8	1.37 (1.19, 1.58)		4	1.38 (1.18, 1.61)	

CVD=cardiovascular disease; IFG-ADA=impaired fasting glucose according to the American Diabetes Association definition (fasting glucose 5.6-6.9 mmol/L); IFG WHO= impaired fasting glucose according to the World Health Organization definition (fasting glucose 6.1-6.9 mmol/L); IGT=impaired glucose tolerance

* For heterogeneity among subgroups.

† Adequate adjustment denoted adjustment of at least five of six confounders including sex, age, hypertension or blood pressure or antihypertensive treatment, body mass index or other measure of overweight/obesity, cholesterol, and smoking