

**Table 4-C-I-1 Summary of Findings**

*Hypothesis that adherence to a dietary pattern has a favorable association with impaired glucose tolerance, insulin resistance or incident type 2 diabetes*

Study/ DP/ Cohort or Trial	Glucose Tolerance	Insulin Resistance	Incident T2D
Abiemo 2012/MedDiet/MESA			∅ T2D (Total, Men, Women, racial/ethnic groups)
Fung 2007/AHEI/NHS			↓ T2D
Gopinath 2013/Total Diet/BMES			∅ T2D
Liese 2009/DASH Score/IRAS			∅ T2D Total population ∅ Blacks/Hispanics ↓ T2D Whites
Martínez-González 2008/MDS/SUN			↓ T2D
Rossi 2013/MDS/EPIC-Greece			↓ T2D
von Ruesten 2010/GFPI/EPIC-Potsdam			∅ T2D (Men, Women)
Zamora 2011/DQI-2005/CARDIA			∅ T2D (Total, Blacks, Whites)
Estruch 2006/MDS/PREDIMED	↓ Fasting glucose (Med+OO) (Med+nuts)	↓ HOMA-IR (Med+OO) (Med+nuts)	
Gopinath 2013/Total Diet/BMES	↓ Fasting glucose Men ∅ Fasting glucose Women		
Jacobs 2009/Author <i>a priori</i> /ODES	∅ Fasting glucose	↓ Fasting insulin ↓ Insulin, Glu challenge	
Rumawas 2009/MSDPS/FOS	↓ Fasting glucose	↓ HOMA-IR	
Zamora 2011/DQI-2005/CARDIA		↓ HOMA-IR – Whites ↑ HOMA-IR – Blacks	

**Table 4-C-I-2 Overview Table: Type 2 Diabetes**

Author, Year Study Design	Sample Size Location Duration Dietary Assessment	Population Age/Gender Cohort	Exposure Index/Score	Outcomes Measured Cases	Health Outcome	
<b>Incidence of Type 2 Diabetes</b>						
1.	Abiemo et al., 2012  Neutral  Prospective Cohort	N = 5,390  U.S. 6.6 y  FFQ (127 item)	Range: 45–84 y  54% Women  Multi-Ethnic Study of Atherosclerosis (MESA)  Whites, Blacks, Hispanic, Chinese	MedDiet Score Total Score 0 - 10	T2D incidence  412 incident cases of T2D (7.6%)	T2D, comparing highest to lowest quintiles of MedDiet score:  <u>Total population:</u> HR = 1.09 (95% CI = 0.80 - 1.49; P for trend = 0.51, NS) <u>Men:</u> HR = 1.11 (95% CI = 0.70 - 1.76; P for trend = 0.69, NS) <u>Women:</u> HR = 1.12 (95% CI = 0.74 - 1.71; P for trend = 0.55, NS)
2.	Fung et al., 2007  Positive  Prospective Cohort	N = 80,029  U.S. 18 y  FFQ (116 item)	Range: 30–55 y  Women  Nurses' Health Study (NHS)	AHEI Total Score 2.5 - 87.5	T2D incidence 5,183 incident cases of T2D (6.5%)	T2D, comparing the highest with the lowest quintile of AHEI score:  RR = 0.64 (95% CI = 0.58 - 0.71; P for trend < 0.0001) Model 1 RR = 0.76 (95% CI = 0.66 - 0.88; P for trend < 0.0001) Model 2 (+WHR)  <u>Among symptomatic individuals:</u> RR = 0.56 (95% CI = 0.49 - 0.64; P for trend < 0.0001) Model 1  <u>For change in AHEI over follow-up:</u> Change from low to high AHEI in last 4 y: RR = 0.78 (95% CI = 0.66 - 0.92, P = 0.003) Model 1
3.	Gopinath et al., 2013  Positive  Prospective Cohort	N = 1,821  Australia 10 y  FFQ (145 item)	Mean: ~63 y  42% Women (T2D) 58% Women (IFG)  Blue Mountain Eye Study (BMES)	Total Diet Score Total Score 0 - 20	T2D incidence  144 incident cases of T2D (7.9%)	T2D, comparing highest to lowest tertile of TDS:  OR = 1.00 (95% CI = 0.63 - 1.58; P for trend = 0.99, NS)
4.	Liese et al., 2009  Positive  Prospective Cohort	N = 822  U.S. 5 y  FFQ (114 item)	Range: 40-69 y  50% Women  Insulin Resistance Atherosclerosis Study (IRAS)	DASH score Total Score 0 - 80	T2D incidence  129 incident cases of T2D (15.7%)  <u>Whites:</u> 15.0% <u>Blacks/ Hispanics:</u> 16.2%	T2D, comparing highest to lowest tertiles of DASH score:  <u>Total population:</u> OR = 0.64 (95% CI = 0.37 - 1.13; P for trend = 0.29, NS) <u>Whites:</u> OR = 0.25 (95% CI = 0.09 - 0.67; P for trend = 0.02) <u>Blacks/Hispanics:</u> OR = 0.96 (95% CI = 0.46 - 1.97; P for trend = 0.95, NS)
5.	Martínez-González et al., 2008  Positive  Prospective Cohort	N = 13,380  Spain 4.4 y  FFQ (136-item)	Mean Age: ~ 38 y  60% Women  Seguimiento Universidad de Navarra (SUN)	Mediterranean Diet Score (MDS) Total Score 0 - 9	T2D incidence  33 incident cases of T2D (0.25%)	T2D, comparing highest to lowest MDS (high, med, low): Rate Ratio = 0.17 (95% CI = 0.04 - 0.72; P for trend = 0.04)  T2D, per 2 pt increase in MDS: Rate Ratio = 0.65 (95% CI = 0.44 - 0.95; P for trend = 0.04)

**Table 4-C-I-2 Overview Table: Type 2 Diabetes—continued**

	Author, Year Study Design	Sample Size Location Duration Dietary Assessment	Population Age/Gender Cohort	Exposure Index/Score	Outcomes Measured Cases	Health Outcome
<b>Incidence of Type 2 Diabetes</b>						
6.	Rossi et al., 2013  Neutral  Prospective Cohort	N = 22,295  Greece 11.3 y  FFQ (150-item)	Median Age: 50 y  59% Women  EPIC-Greece	Mediterranean Diet Score (MDS) Total Score 0 - 9	T2D incidence  2,330 incident cases of T2D (10%)	T2D, comparing highest to lowest MDS: HR = 0.88 (95% CI = 0.78 - 0.99; P = 0.021)
7.	von Ruesten et al., 2010  Positive  Prospective Cohort	N = 23,531  Germany 7.8 y  FFQ (148-item)	Mean Age by GFPI: ♀: 46.5±8.8 - 49.7±9.6 y ♂: 50.1±7.6 - 53.2±8.3 y  61% Women  EPIC-Potsdam	German Food Pyramid Index (GFPI) Total Score 0 - 110	T2D incidence  837 incident cases of T2D (3.6%)	T2D, comparing highest to lowest quintile of GFPI: <u>Men:</u> HR = 0.74 (95% CI = 0.54 - 1.01; P for trend = 0.03) Model 1 HR = 0.94 (95% CI = 0.69 - 1.30; P for trend = 0.63, NS) Model 2 (+BMI) <u>Women:</u> HR = 0.72 (95% CI = 0.51 - 1.00; P for trend = 0.06, NS) Model 1 HR = 1.09 (95% CI = 0.77 - 1.54; P for trend = 0.57, NS) Model 2 (+BMI)
8.	Zamora et al., 2011  Positive  Prospective Cohort	N = 4,381  U.S. 20 y  FFQ (CARDIA)	Range: 18–30 y  Blacks: 58% Women Whites: 53% Women  Coronary Artery Risk Development in Young Adults (CARDIA)	DQI-2005 Total Score 0 - 100	T2D incidence  328 incident cases of T2D (7.5%)	T2D, comparing highest to lowest quartiles of DQI: <u>Total population:</u> HR = 1.05 (95% CI = 0.71 - 1.56, NS) Model 1 HR = 1.16 (95% CI = 0.79 - 1.71, NS) Model 2 (+BMI) <u>Blacks:</u> HR = 1.10 (95% CI = 0.65 - 1.86, NS) Model 1 HR = 0.96 (95% CI = 0.57 - 1.62, NS) Model 2 (+BMI) <u>Whites:</u> HR = 0.78 (95% CI = 0.44 - 1.37, NS) Model 1 HR = 1.14 (95% CI = 0.65 - 2.00, NS) Model 2 (+BMI)
<b>Impaired Fasting Glucose and/or Insulin Resistance</b>						
1.	Estruch et al., 2006  Positive  RCT	Initial N = 772 Final N = 769  Spain 3 mos  FFQ (137-item)	Range: 55–80 y  High CVD risk  60, 50, 58% ♀: Med+OO, Med+nuts, and control  Prevencion con Dieta Mediterranea (PREDIMED) Trial	Med diet + olive oil (OO) or Med diet + nuts vs control, low-fat diet	Fasting glucose and insulin, and HOMA-IR	<b>Fasting glucose:</b> Med + OO vs control, mean change: -0.39 mmol/L (95% CI = -0.72 to -0.07, P=0.017) Med + nuts vs control, mean change: -0.30 mmol/L (95% CI = -0.58 to -0.01, P=0.039)  <b>Fasting Insulin:</b> Med + OO vs control, mean change: -16.7 pmol/L (95% CI = -27.1 to -0.4, P=0.001) Med + nuts vs control, mean change: -20.4 pmol/L (95% CI = -31.9 to -9.7, P<0.001)  <b>HOMA-IR:</b> Med + OO vs control, mean change: -0.91 (95% CI = -1.40 to -0.46, P<0.001) Med + nuts vs control, mean change: -1.1 (95% CI = -1.6 to -0.55, P<0.001)

**Table 4-C-I-2 Overview Table: Type 2 Diabetes—continued**

	Author, Year Study Design	Sample Size Location Duration Dietary Assessment	Population Age/Gender Cohort	Exposure Index/Score	Outcomes Measured Cases	Health Outcome
2.	Gopinath et al., 2013 Positive Prospective Cohort	N = 1,630 Australia 10 y FFQ (145 item)	Mean: ~63 y 42% Women (T2D) 58% Women (IFG) Blue Mountain Eye Study (BMES)	Total Diet Score Total Score 0 - 20	Fasting glucose 91 incident cases of IFG (5.6%)	<b>Fasting glucose</b> , comparing the highest with the lowest tertile of TDS:  <u>Men:</u> OR = 0.25 (95% CI = 0.08 - 0.73; P for trend = 0.004) <u>Women:</u> OR = 1.74 (95% CI = 0.75 - 4.00; P for trend = 0.24, NS)
3.	Jacobs et al., 2009 Positive RCT	Initial N = 219 Final N = 187 Norway 1 y FFQ (180-item)	Mean Age: 45±2 y Met criteria for Metabolic Syndrome Men Oslo Diet and Exercise Study (ODES)	Author derived a <i>a priori</i> score Total Score 0 - 62	Fasting glucose and insulin	<b>Fasting glucose</b> , per 10 point increase in a <i>a priori</i> diet score: Mean change: -0.17±0.06 mmol/L; P = 0.01 Model 1 Mean change: -0.12±0.06 mmol/L; P = 0.06, NS Model 2 (+ % body fat)  <b>Fasting insulin</b> , per 10 point increase in a <i>a priori</i> diet score: Mean change: -20.1±6.69 pmol/L; P=0.003 Model 1 Mean change: -22.5±6.87 pmol/L; P=0.002 Model 2 (+ % body fat)  <b>Insulin after glucose challenge:</b> Mean change: -125.1 ±54.94 pmol/L; P=0.02 Model 1 Mean change: -120.3 ±56.77 pmol/L; P=0.04 Model 2 (+ % body fat)
4.	Rumawas et al., 2009 Positive Prospective Cohort	N = 2,730 U.S. 7 y FFQ (Harvard)	Range: 43-70 y 43-70% Women across quintiles Framingham Offspring and Spouse (FOS)	Mediterranean-style dietary pattern score (MSDPS) Total score 0 - 100	Fasting blood glucose and HOMA-IR	<b>Fasting glucose</b> for quintile 5 of MSDPS: Mean = 97.1 mg/dL (95% CI = 96.3 - 98.0; P for trend = 0.03, compared to quintile 1)  <b>HOMA-IR</b> for quintile 5 of MSDPS: Mean = 3.16 (95% CI = 3.03 - 3.30; P for trend = 0.02, compared to quintile 1)
5.	Zamora et al., 2011 Positive Prospective Cohort	N = 4,381 U.S. 20 y FFQ (CARDIA)	Range: 18-30 y Blacks: 58% Women Whites: 53% Women Coronary Artery Risk Development in Young Adults (CARDIA)	DQI-2005 Total Score 0 - 100	HOMA-IR	<b>HOMA-IR</b> , comparing highest to lowest quartiles of DQI:  <u>Blacks:</u> quartile 4, Mean = 1.20 (95% CI = 0.77 - 1.66; P for trend = 0.01, compared to quartile 1) <u>Whites:</u> quartile 4, Mean = 0.48 (95% CI = 0.29 - 0.69; P for trend = 0.08, compared to quartile 1)