Supplementary Tables and Figures

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┌─────────────────────────────────────────┐
│ 161,808 postmenopausal women in WHI      │
│ aged 50-79 years                         │
└─────────────────────────────────────────┘
                    │
                    ▼
┌─────────────────────────────────────────┐
│ Excluded:                                │
│                                          │
│  • Implausible energy intake (<600       │
│    kcal/day and >5000 kcal/day;          │
│    n=4,686)                              │
│  • Extreme BMI (< 15 or >50 kg/m²;       │
│    n=6,476);                             │
│  • Prevalent cancer (except non-         │
│    melanoma skin cancer) at baseline     │
│    (n=11,840),                           │
│  • Baseline T2D (n=7,768)                │
│  • Baseline pancreatitis (n=496);        │
│  • Women with no pancreatic cancer       │
│    status (n=1,154).                     │
│  • Women who were diagnosed with         │
│    pancreatic cancer within 4 years from │
│    baseline (n=147)                      │
└─────────────────────────────────────────┘
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                    ▼
┌─────────────────────────────────────────┐
│ 129,241 postmenopausal women retained    │
│ in the final analytic sample             │
└─────────────────────────────────────────┘
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Supplementary Figure S1. Participant flow chart for the final sample in the Women's Health Initiative

Supplementary Table S1. Long List of Women's Health Initiative Investigators

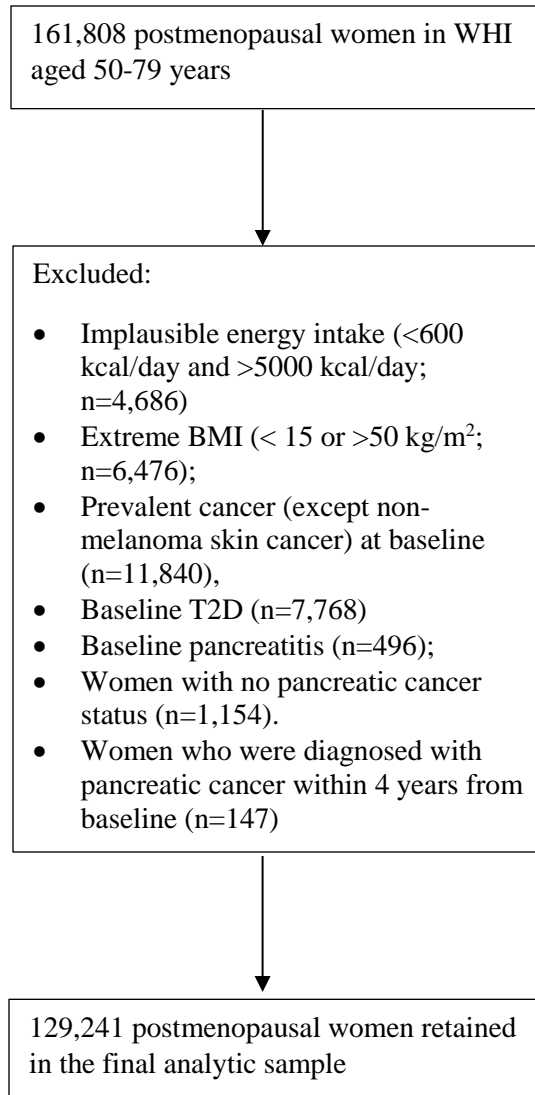|	
Program Office	National Heart, Lung, and Blood Institute, Bethesda, Maryland) Jacques Rossouw, Shari Ludlam, Joan McGowan, Leslie Ford, Nancy Geller
Clinical Coordinating Center	(Fred Hutchinson Cancer Research Center, Seattle, WA) Garnet L. Anderson, Ross Prentice, Charles Kooperberg, Lisa Johnson, Andrea LaCroix, Lesley Tinker, Marian Neuhouser, Susan Heckbert, Alex Reiner, Chongzhi Di, Xiaoling Song, Wayne Rosamond, Shirley Beresford, Chu Chen, Barbara Cochrane
Investigators and Academic Centers	(Brigham and Women's Hospital, Harvard Medical School, Boston, MA) JoAnn E. Manson, Shari Bassuk, Howard Sesso, Lu Wang; (MedStar Health Research Institute, Washington, DC) Barbara V. Howard; (Stanford Prevention Research Center, Stanford, CA) Marcia Stefanick, Mark Hlatky, Marco Perez, Themistocles (Tim) Assimes and Jean Tang; (The Ohio State University, Columbus, OH) Rebecca Jackson, Randall Harris, Electra Paskett, W. Jerry Mysiw, Michael Blumenfeld; (University of Arizona, Tucson/Phoenix, AZ) Cynthia A. Thomson, Tamsen Bassford, Cheryl Ritenbaugh, Zhao Chen, Marcia Ko; (University at Buffalo, Buffalo, NY) Jean Wactawski-Wende, Michael LaMonte, Amy Millen, Heather Ochs-Balcom, Christopher Andrews; (University of Florida, Gainesville/Jacksonville, FL) Marian Limacher, Michael Perri, Andrew Kaunitz, R. Stan Williams, Yvonne Brinson; (University of Iowa, Iowa City/Davenport, IA) Jennifer Robinson, Robert Wallace, James Torner, Susan Johnson, Linda Snetselaar; (University of Nevada, Reno, NV) Robert Brunner, Sandra Daugherty1 ; (University of Pittsburgh, Pittsburgh, PA) Lewis Kuller, Jane Cauley, N. Carole Milas; (Wake Forest University School of Medicine, WinstonSalem, NC) Sally Shumaker, Stephen Rapp, Claudine Legault, Mark Espeland, Laura Coker, Michelle Naughton
Women's Health Initiative Memory Study	(Wake Forest University School of Medicine, Winston-Salem, NC) Mark Espeland, Sally Shumaker, Stephen Rapp, Claudine Legault, Laura Coker, Michelle Naughton
Former Principal Investigators and Project Officers	(Albert Einstein College of Medicine, Bronx, NY) Sylvia Wassertheil-Smoller (Baylor College of Medicine, Houston, TX) Haleh Sangi-Haghpeykar, Aleksandar Rajkovic, Jennifer Hays, John Foreyt; (Brown University, Providence, RI) Charles B. Eaton, Annlouise R. Assaf; (Emory University, Atlanta, GA) Lawrence S. Phillips, Nelson Watts, Sally McNagny, Dallas Hall,; (Fred Hutchinson Cancer Research Center, Seattle, WA) Shirley A.A. Beresford, Maureen Henderson; (George Washington University, Washington, DC) Lisa Martin, Judith Hsia, Valery Miller; (HarborUCLA Research and Education Institute, Torrance, CA) Rowan Chlebowski (Kaiser Permanente Center for Health Research, Portland, OR) Erin LeBlanc, Yvonne Michael, Evelyn Whitlock, Cheryl Ritenbaugh, Barbara Valanis; (Kaiser Permanente Division of Research, Oakland, CA) Bette Caan, Robert Hiatt; (National Cancer Institute, Bethesda, MD) Carolyn Clifford1 ; (Medical College of Wisconsin, Milwaukee, WI) Jane

Supplementary Table S2. Distribution of baseline characteristics in the final analytic sample and among excluded participants

Characteristic	Excluded Sample (N= 32567)	Included Sample (N=129241)	P-value[1]
Race/ethnicity, %			
African American	16.2	7.2	
American Indian or Alaskan Native	0.7	0.4	
Hispanic	6.6	3.3	<.0001
Asian or Pacific Islander	2.5	2.6	
European American	72.6	85.0	
Other race groups	1.3	1.4	
Age, years	63.9 (63.8, 64.0)	63.1 (63.0, 63.1)	<.0001
Body mass index (BMI), kg/m^2	27.4 (27.3, 27.5)	27.4 (27.3, 27.4)	0.6816
Underweight (BMI<15), %	14.0	2.1	
Normal weight (15≤BMI < 25), %	23.9	36.2	
Overweight (25≤BMI < 30), %	27.0	34.6	<.0001
Obese (BMI ≥30), %	35.0	27.2	
Physical activity, MET-hours/week	11.4 (11.3, 11.6)	12.8 (12.7, 12.9)	<.0001
Pack-years of smoking	10.7 (10.4, 10.9)	9.9 (9.8, 10.0)	<.0001
Current smoking, %	7.3	6.8	0.0003
Aspirin/NSAIDs use, %	12.6	13.6	<.0001
Statin use, %	2.7	2.2	<.0001
Hypercholestrolemia, %	18.5	13.7	<.0001
Educational level, %			
Less than high school	7.9	4.7	
High school/GED/Some college	57.1	54.1	<.0001
≥4 years of college	34.1	40.5	
Total alcohol intake, servings/week	1.8 (1.7, 1.8)	2.5 (2.5, 2.5)	<.0001
Gallbladder removal	16.1	11.9	<.0001

[1] P values for continuous variables were determined via independent sample t-test and P values for categorical variables were determined via chi-square test.

Supplementary Table S3. Distribution of baseline characteristics in the final analytic sample and among the whole Women's Health Initiative cohort

Characteristic	Whole WHI Cohort (N= 161,808)	Final Analytic Sample (N=129,241)
Race/ethnicity, %		
African American	9.0	7.2
American Indian or Alaskan Native	0.4	0.4
Hispanic	4.0	3.3
Asian or Pacific Islander	2.6	2.6
European American	82.5	85.0
Other race groups	1.4	1.4
Age, years	63.2±7.2	63.1±7.2
Body mass index (BMI), kg/m^2	27.4±6.5	27.4±5.5
Underweight (BMI<15), %	4.4	2.07
Normal weight (15≤BMI < 25), %	33.8	36.2
Overweight (25≤BMI < 30), %	33.2	34.6
Obese (BMI ≥30), %	28.7	27.2
Physical activity, MET-hours/week	12.5±13.5	12.8±13.5
Pack-years of smoking	10.0±18.3	9.9±17.9
Current smoking, %	6.9	6.79
Aspirin/NSAIDs use, %	13.4	13.6
Statin use, %	2.3	2.2
Hypercholestrolemia, %	14.6	13.7
Educational level, %		
Less than high school	5.3	4.7
High school/GED/Some college	54.7	54.1
≥4 years of college	39.2	40.5
Total alcohol intake, servings/week	2.4±4.9	2.5±4.9
Gallbladder removed, %	12.8	11.9

Supplementary Table S4. Food group components of the empirical dietary index for hyperinsulinemia (EDIH) score[1] and empirical dietary inflammatory pattern (EDIP) score[2] in the Women's Health Initiative.

EDIH components	Weight	Food items
		Food components positively associated with C-peptide concentrations
Processed meat	0.199	Processed meats (lunch meat other lunch meat), bacon, hot dog
Red meat	0.25	Beef, pork and lamb as a main dish, ground meat incl hamburgers, Beef, pork, and lamb as a sandwich, stew, pot pie and casseroles with meat, gravies made with meat drippings, Menudo and tortilla soup
High-energy sugary beverages	0.104	Regular soft drinks (not diet)
Margarine	0.054	Margarine
Butter	0.094	Butter
French fries	0.581	French fries
Non-dark fish	0.172	Tuna, shrimp, lobster, scallops, seafood other than dark fish
Eggs	0.124	Egg
Low-fat dairy	0.025	Low-fat milk, sherbet or ice milk, yogurt, low-fat desserts
Cream soup	0.787	Chowder or cream soup
Tomatoes	0.095	Fresh tomato & tomato juice, tomato sauce
Poultry	0.183	Chicken & turkey, fried chicken, Chicken or turkey with or without skin
		Food components inversely associated with C-peptide concentrations
Green leafy vegetables	-0.055	Spinach& mustard greens& turnip greens& collards, iceberg or head lettuce, romaine or leaf lettuce
Wine	-0.165	Red, white wine
Coffee	-0.035	Coffee (regular or decaffeinated)
High-fat diary	-0.046	Whole milk, cream, sour cream ice cream, cream cheese, other cheese
Whole fruit	-0.029	Raisins, grapes, avocado, banana, cantaloupe, watermelon, orange, apple, pear, grapefruit, strawberries, blueberries, peaches, apricots, plums

EDIP components	Weight	Food items
		Food components positively associated with concentrations of inflammatory markers
Processed meat	157.121	Hot dogs, processed meats (including processed meat sandwich) , bacon

Red meat	135.786	Hamburger, beef /pork /lamb sandwich, beef /pork/ lamb main dish
Organ meat	45.528	Livers
Other fish	243.829	Canned tuna, shrimp, breaded fish, lobster, scallops or other seafood
Other vegetables	136.891	Corn, mixed vegetables, eggplant, celery, alfalfa sprouts, mushrooms, green/yellow/red peppers, zucchini, cucumbers
	87.025	White bread, white rice, bagels/English muffins/rolls, muffins or biscuits, pasta, pancakes or waffles, refined cold breakfast cereals
High energy beverage	154.800	Cola, Hawaiian punch, caffeine-free coke, pepsi, carbonated beverage with caffeine and sugar, other carbonated beverage with sugar
Tomato	160.659	Fresh tomatoes, tomato juice, tomato sauce
		Food components inversely associated with concentrations of inflammatory markers
Beer	-135.240	Beer, light beer
Wine	-248.816	White wine, red wine
Tea	-128.297	Tea, tea (not herbal)
Coffee	-128.297	Coffee, decaffeinated coffee
Dark yellow vegetable	-166.196	Carrots, sweet potatoes, winter squash
Green leafy vegetable	-188.935	Spinach, iceberg lettuce, romaine lettuce
Snack	-43.825	Potato/corn chips, popcorn, crackers
Fruit juice	-60.660	Apple juice, orange juice, grape juice, prune juice, other juice
Pizza	-1169.052	Pizza

[1] The EDIH component foods (servings/d) in the WHI were: Red meat (ground meat including hamburgers, beef, pork and lamb as a main dish, or as a sandwich; stew, pot pie and casseroles with meat; gravies made with meat drippings); high-energy sugary beverages, (all regular - not diet - soft drinks); low-energy sugary beverages (the WHI FFQ did not assess low-energy beverages separately from other sugar-sweetened beverages); cream soup (such as chowders, potato, tomato, cheese, ajiaco); processed meat (hot dogs, chorizo; other sausage, bacon, breakfast sausage, scrapple; lunch meat such as ham, turkey; other lunch meat such as bologna); butter, margarine (butter, margarine or oil, on bread or tortillas; margarine or butter added to cooked cereal or grits; butter, margarine, sour cream, oils, or other fat added to vegetables, beans, rice, and potatoes, after cooking); poultry (poultry); French fries (French fries, fried potatoes, fried rice, fried cassava and fritters); non-dark or non-oily fish (fried fish, shrimp, lobster, crab and oysters, canned tuna, tuna salad, and tuna casserole, white fish such as sole, snapper, cod); tomatoes (fresh tomato, tomato juice, tomato sauce, cooked tomato, salsa and salsa picante); low-fat dairy (part-skim or reduced fat cheeses, such as Mexican-type cheeses or mozzarella. Include cheese added to foods and in cooking; low-fat cottage cheese; low-fat or no-fat frozen desserts, such as frozen yogurt, sherbet, ice milk, and low-fat milkshakes; non-fat yogurt (not frozen); all other yogurt (not frozen); low-fat milk; Milk, cream, or creamer in coffee or tea); eggs (eggs); wine (red wine, white wine); coffee or tea (all types); fruits (all types); high-fat dairy (whole milk, evaporated/condense milk, ice cream, cottage cheese and ricotta cheese, other cheese); green leafy vegetables (cooked greens such as spinach, mustard greens, turnip greens, collards; lettuce and plain lettuce salad; mixed lettuce or spinach salad with vegetables).

[2] The EDIP component foods (servings/d) in the WHI were: processed meat (hot dogs, chorizo, other sausage, bacon, breakfast sausage, scrapple; lunch meat such as ham, turkey; other lunch meat such as

bologna); red meat (ground meat including hamburgers, beef, pork, and lamb as a main dish or as a sandwich; stew, pot pie, and casseroles with meat;

gravies made with meat drippings); organ meat (liver, including chicken liver; other organ meats); fish other than dark-meat fish (fried fish, shrimp, lobster, crab and oysters, canned tuna, tuna salad, and tuna casserole, white fish such as sole, snapper, cod); other vegetables (i.e., vegetables other than green leafy vegetables and dark yellow vegetables: red peppers and red chilies, green peppers, green chilies, jalapenos, and green chili salsa, corn, and hominy); refined grains (total grain variable minus whole grain variable, both WHI-computed food groups); high-energy beverages [all regular (not diet) soft drinks]; low-energy beverages (the WHI FFQ did not assess low-energy beverages); tomatoes (fresh tomato, tomato juice, tomato sauce, cooked tomato, salsa and salsa picante); beer (all types); wine (red wine, white wine); coffee or tea (all types); dark-yellow vegetables (carrots, including mixed dishes with carrots; summer squash, zucchini, nopales, and okra; winter squash, such as acorn, butternut, and pumpkin; sweet potatoes and yams; other potatoes, cassava, and yucca—boiled, baked, or mashed); green leafy vegetables (cooked greens such as spinach, mustard greens, turnip greens, collards; lettuce and plain lettuce salad; mixed lettuce or spinach salad with vegetables); pizza (low-fat pizza; other pizza); fruit juice (orange juice and grapefruit juice; other fruit juices such as apple and grape); snacks (snacks such as potato chips, corn chips, tortilla chips, Ritz and cheese crackers; saltines, Snackwell's, fat-free tortilla chips and fat-free potato chips; popcorn).

Supplementary Table S5. Description of covariates used in the current study

Covariates	Variable Description
Total energy intake	Dietary energy intake (kcal/day)
Education	1 = Didn't go to school
	2 = Grade school (1-4 years)
	3 = Grade school (5-8 years)
	4 = Some high school (9-11 years)/High school diploma or GED
	5 = Vocational or training school/Some college or Associate Degree
	6 = Some post-graduate or professional/College graduate or Baccalaureate Degree
	7 = Master's Degree/Doctoral Degree (Ph.D, M.D.,J.D.,etc.)
	Missing values of education were imputed based on income levels
Race/Ethnicity	1 = European American
	2 = African American
	3 = Hispanic/Latina
	4 = Other race groups
Pack-years of smoking	Continuous variable. A computed variable taking into account years of smoking and number of cigarettes smoked per day on average.
Comorbidity Score	A sum of the following chronic diseases/conditions (0=no/1=yes): High cholesterol requiring pills ever, Stroke ever, high blood pressure ever (Does not include gestational high blood pressure), heart disease ever, stroke ever, and rheumatoid/other arthritis ever.
Hormone Replacement Therapy (HT) study arm	HT study arm to which the participant was randomized:
	0 = Not randomized to HT
	1 = Estrogen-alone intervention
	2 = Estrogen-alone control
	3 = Estrogen + Progestin intervention
	4 = Estrogen + Progestin control
NSAID	Baseline nonsteroidal anti-inflammatory agents use: no=0, yes=1

Supplement	Number of supplements taken. The variable was created from a sum of the following 23 nutrient and mineral supplements variables (yes=1/no=0): vitamin A, alpha-tocopherol, vitamin B1, vitamin B12, vitamin B2, vitamin B6, beta-carotene, biotin, vitamin C, calcium, chromium, copper, vitamin D, folic acid, iron, magnesium, manganese, molybdenum, niacin, pantothenic acid, retinol, selenium, and zinc
Age, years	Age at screening
Family history of diabetes	Family history of diabetes: no=0, yes=1
Hormone use	Number of hormones used. The variable was created from a sum of the following 8 WHI variables: Oral contraceptive use ever, diethylstilbestrol use ever, depo-provera use ever, unopposed estrogen use ever, Estrogen + progesterone use ever, Testosterone or other male hormone use, Estratest use, oral daily use of a glucocorticosteroid
Physical activity	Total energy expended from recreational physical activity (MET-hours/week)
Body mass index (BMI)	Continuous, kg/m^2
BMI (categorical)	Three level categorical variable (kg/m^2): 1 = underweight to normal (15 to <18.5) 2 = normal weight (18.5 to <25) 3 = overweight (25 to <30) 4 = obese (30 to 50)

Supplementary Table S6. Spearman correlation coefficients between the dietary indices (N= 129,241)

	Correlations using the energy-adjusted dietary indices	Correlations using the dietary indices unadjusted for total energy intake
EDIH-EDIP	0.59	0.58
EDIH-GI	0.27	0.29
EDIH-GL	-0.27	0.37
EDIP-GI	0.28	0.29
EDIP-GL	0.08	0.14
GI-GL	0.33	0.29

EDIH, empirical dietary index for hyperinsulinemia. EDIP, empirical dietary inflammatory pattern score. GI, glycemic index. GL, glycemic load.