**Summary from 20 articles**

**Study cohort size range:**

Before exclusion: 22,476 – 617,119, **mostly around 30,000, For NHANES 9000-20000**

After exclusion: 1,904- 536,969, **mostly around 30,000, For NHANES 9000-20000**

**Exclusion criteria summary:**

(1) Missing dietary variables, missing substantially amount of dietary variables

(2) Bad or inadequate data

(3) Extreme value of total energy intake

(6) Prevalent diseases related to mortality outcomes or prevalent CVD defined as previous coronary bypass, angioplasty/stent, carotid artery surgery, myocardial infarction, stroke, or transient ischemic attack, or angina pectoris or congestive heart failure treated in the past 12 month. Previous malignant neoplasm or cancer before recruitment. Previous diabetes. Previous hemochromatosis.

(7) Uncertain follow-up, loss of follow-up, or those who died before the start of follow-up

(8) Unlikely high daily red meat consumption (>300 g/d) or missing information on red meat consumption.

(9) Women that are pregnant at baseline

(10) Implausible BMI

(11) Subjects with repeated health surveys

**40617** participants initially

(1) Age younger or older than age range considered

**21903** remaining, 18714 exclusions

(2) Missing Alcohol Drinking, Education, marital status, sleep, sedentary lifestyle, smoking

**16251** remaining, 5652 exclusions

(3) Missing history of hypercholesterolemia, history of hypertension, history of diabetes, history of depression, history of cardiovascular disease, history of cancer, history of stroke, family history of diabetes, family history of myocardial infraction

**13131** remaining, 3120 exclusions

(4) Missing family annual income and PIR

**12212 remaining**, 919 exclusions

(5) Missing Occupation category

**11558 remaining,** 654 exclusions

(6) Missing dietary variables: TKCAL, TCARB, TFIBE, TSFAT, TMFAT, TPFAT, TCHOL, TMAGN, F\_FRUIT, V\_TOTAL, PF\_SEAFD, G\_WHOLE, PF\_MPS\_TOTAL, PF\_MEAT, PF\_CUREDMEAT, PF\_POULT, PF\_EGGS, PF\_NUTSDS, PF\_LEGUMES, D\_TOTAL, D\_CHEESE, BEEF\_VEAL, BEEF\_VEAL\_LAMB, BEEF\_VEAL\_PORK BEEF\_VEAL\_PORK\_LAMB. And missing special diet variable, dietary supplement intake.

**11207 remaining**, 351 exclusions

(7) Missing systolic blood pressure

**11047 remaining**, 160 exclusions

(8) Extreme value of total energy intake

**10887 remaining**, 160 exclusions

(8) Missing BMI, Height, Weight, or implausible BMI (<15 or ≥60 kg/m2)

**10797 remaining**, 90 exclusions

(9) Pregnant women

**10715 remaining**, 82 exclusions

(10) Women who are missing Menopausal status, Hormone therapy, Parity, Oral contraceptive use

**10651 remaining,** 64 exclusions

(10) Not available for death linkage

**10639 remaining,** 12 exclusions

**Definition of unprocessed red meat summary:**

(1) Unprocessed red meat intake was reported as two items in the FFQ: “hamburger, ground beef (in casserole, meatballs, etc.)” and “beef or lamb as a main dish (e.g., steak, roast, stew, and pot pies)”.

(2) Beef, pork, veal.

(3) Pork, veal, hamburger, liver, lamb, viscera (offal)

(4) Beef, pork, hamburger, liver, steak, and meats in foods such as chili, lasagna, and stew

(5) Beef or lamb, hamburger

(6) “Beef, pork, or lamb as main dish”, “hamburger,” and “beef, pork, or lamb as a sandwich or mixed dish.”

Summary of definition

(1) BEEF, VEAL, , LAMB

(2) BEEF, VEAL, PORK

(3) BEEF, VEAL, PORK, LAMB

**BEEF+VEAL**

**BEEF+VEAL+PORK**

**BEEF+VEAL+LAMB**

**BEEF+VEAL+PORK+LAMB**

**BEEF+VEAL+PORK+LAMB+GAME MEAT**

**Definition of processed meat summary:**

(1) Processed meat was reported as: “processed beef, lamb (e.g., sausage, salami, and bologna)” and “processed chicken or turkey (e.g., turkey bologna, and turkey ham)”. Pork was classified as processed meat because most of the pork products listed in the single pork question in the FFQ were processed (i.e., “pork (bacon, sausage, ham, chops, ribs, and lunch-meat)”).

(2) Sausages, hot dogs, salami, ham, processed meat cuts, liver pate, and blood sausage.

(3) Dry cured ham, cooked ham, sausages [salami, mortadella, blood sausage, spicy pork sausage, würstel], bacon, pancetta, paté

(4) Bacon, beef cold cuts, ham, hotdogs, and sausage

(5) Sausage

(6) “Bacon” (2 slices, 13 g), “hot dogs” (one, 45 g), and “sausage, salami, bologna, and other processed red meats”

(7) All meat products, including ham, bacon, sausages; small part of minced meat that has been bought as a ready-to eat product

**Definition of red meat summary:**

(1) Beef, pork, ham, liver and other organ meats

(2) Beef, pork, mutton/lamb, horse, goat

(3) Pork chops; pork ribs; pig’s feet; regular fresh pork; lean fresh pork; mixed fresh pork; pig, cow, and sheep liver; organ meat, including heart, brain, tongue, tripe, and intestine; and beef and lamb

**NHANES We used:**

NHANES 2015-2016: 9971 removed

NHANES 2013-2014: 10175

NHANES 2011-2012: 9756

NHANES 2009-2010: 10537

NHANES 2007-2008: 10149

Total of 50000 initially

To be continued:

**Analytics:**

(1) Gram per day used for unprocessed red meat, log-transform the unprocessed red meat variable, and 90th percentile of intake with zero-intake

(2) Time-dependent Cox-proportional hazards regression with attained age as the time variable

(3) Left truncation by age at study entry

(4) Multiple imputation, guided where possible, for missing data [14,15], in which the estimates were calculated from five imputed datasets, and then Rubin’s formula was applied to obtain the average estimates and corrected standard errors.