Electronic Supplementary Material (ESI) for Food \& Function.
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## Figure S1

 ( $\mathrm{n}=9,059$ )

Table S1. The DOBS assignment scheme.

| DOBS components | Property | DOBS score |  |  |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
|  |  | 0 | 1 | 2 |  |
| Dietary fiber $(\mathrm{g} / \mathrm{d})$ | A | $\leq 12.00$ | $>12.00, \leq 18.10$ | $>18.10$ |  |
| Carotene $(\mu \mathrm{g} / \mathrm{d})$ | A | $\leq 178.47$ | $>178.47, \leq 241.68$ | $>241.68$ |  |
| Vitamin B2 $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 1.53$ | $>1.53, \leq 2.16$ | $>2.16$ |  |
| Niacin $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 16.62$ | $>16.62, \leq 23.69$ | $>23.69$ |  |
| Vitamin B6 $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 1.37$ | $>1.37, \leq 2.02$ | $>2.02$ |  |
| Folic acid $(\mu \mathrm{g} / \mathrm{d})$ | A | $\leq 277.00$ | $>277.00, \leq 404.00$ | $>404.00$ |  |
| Vitamin B12 $(\mu \mathrm{g} / \mathrm{d})$ | A | $\leq 2.96$ | $>2.96, \leq 5.14$ | $>5.14$ |  |
| Vitamin C $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 46.40$ | $>46.40, \leq 99.13$ | $>99.13$ |  |
| Vitamin E $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 4.75$ | $>4.75, \leq 7.50$ | $>7.50$ |  |
| Calcium $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 603.50$ | $>603.50, \leq 901.00$ | $>901.00$ |  |
| Magnesium $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 214.00$ | $>214.00, \leq 295.50$ | $>295.50$ |  |
| Zinc $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 7.63$ | $>7.63, \leq 11.18$ | $>11.18$ |  |
| Copper $(\mathrm{mg} / \mathrm{d})$ | A | $\leq 0.91$ | $>0.91, \leq 1.27$ | $>1.27$ |  |
| Selenium $(\mu \mathrm{g} / \mathrm{d})$ | A | $\leq 75.90$ | $>75.90, \leq 107.37$ | $>107.37$ |  |
| Total fat $(\mathrm{g} / \mathrm{d})$ | P | $>74.59$ | $\leq 74.59,>50.86$ | $\leq 50.86$ |  |
| Iron $(\mathrm{mg} / \mathrm{d})$ | P | $>15.49$ | $\leq 15.49,>10.64$ | $\leq 10.64$ |  |

A, Anti-oxidant; P, Pro-oxidant. DOBS, Dietary Oxidative Balance Score.

Table S2. Association of single CVD or DOBS status with all-cause mortality among US older adults, NHANES 20032014 (n=9059).

| Morality outcome |  | Hazard ratio (95\% CI) |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: | :---: |
|  | death (\%) | Crude model | Model 1 | Model 2 |  |  |
| All-causes |  |  |  |  |  |  |
| $\quad$ Non-CVD | $2118(31.06)$ | Ref. | Ref. | Ref. |  |  |
| CVD | $1262(56.36)$ | $2.54(2.31-2.81),<0.001$ | $1.87(1.7-2.05),<0.001$ | $1.64(1.50-1.80),<0.001$ |  |  |
| Anti-oxidant diet | $632(32.49)$ | Ref. | Ref. | Ref. |  |  |
| Pro-oxidant diet | $2748(38.63)$ | $1.38(1.22-1.57),<0.001$ | $1.41(1.24-1.6),<0.001$ | $1.25(1.09-1.43), 0.001$ |  |  |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

Table S3. Joint association of CVD and DOBS status with all-cause mortality among US older adults, NHANES 2003-2014 ( $\mathrm{n}=9059$ ).

| Morality outcome |  | Hazard ratio (95\% CI) |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: | :---: |
|  | death (\%) | Crude model | Model 1 | Model 2 |  |  |
| All-causes |  |  |  |  |  |  |
| $\quad$ Non-CVD \& Anti-oxidant diet | $413(27.37)$ | Ref. | Ref. | Ref. |  |  |
| $\quad$ Non-CVD \& Pro-oxidant diet | $1705(32.10)$ | $1.27(1.10-1.47), 0.001$ | $1.26(1.10-1.44), 0.001$ | $1.13(0.97-1.31), 0.114$ |  |  |
| CVD \& Anti-oxidant diet | $219(50.23)$ | $2.17(1.74-2.70),<0.001$ | $1.50(1.21-1.85),<0.001$ | $1.30(1.05-1.62), 0.016$ |  |  |
| CVD \& Pro-oxidant diet | $1043(57.85)$ | $3.33(2.81-3.95),<0.001$ | $2.45(2.09-2.88),<0.001$ | $1.96(1.64-2.34),<0.001$ |  |  |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

Table S4. Association of DOBS status with all-cause mortality among US older adults in CVD and non-CVD cohorts, NHANES 2003-2014 (n=9059).

| Morality outcome | death (\%) | Hazard ratio (95\% CI) |  |  | P for interaction in Model 2 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Crude model | Model 1 | Model 2 |  |
| All-causes |  |  |  |  | 0.015 |
| Non-CVD cohorts |  |  |  |  |  |
| Anti-oxidant diet | 413 (27.37) | Ref. | Ref. | Ref. |  |
| Pro-oxidant diet | 1705 (32.10) | $\begin{aligned} & 1.27 \text { (1.10-1.47), } \\ & 0.001 \end{aligned}$ | $\begin{aligned} & 1.29 \text { (1.13-1.47), } \\ & <0.001 \end{aligned}$ | $\begin{aligned} & 1.13(0.97-1.31), \\ & 0.130 \end{aligned}$ |  |
| CVD cohorts |  |  |  |  |  |
| Anti-oxidant diet | 219 (50.23) | Ref. | Ref. | Ref. |  |
| Pro-oxidant diet | 1043 (57.85) | $\begin{aligned} & 1.53 \text { (1.24-1.89), } \\ & <0.001 \end{aligned}$ | $\begin{aligned} & 1.53(1.23-1.90), \\ & <0.001 \end{aligned}$ | $\begin{aligned} & 1.48 \text { (1.18-1.86), } \\ & 0.001 \end{aligned}$ |  |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

Table S5. Sensitivity Analyses of the association between single CVD or DOBS status and all-cause mortality among US older adults excluding participants who died within two years of follow-up, NHANES 2003-2014 (n=8616).

| Morality outcome |  | Hazard ratio (95\% CI) |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | death (\%) | Crude model | Model 1 | Model 2 |
| All-causes |  |  |  |  |
| Non-CVD | $1884(28.61)$ | Ref. | Ref. | Ref. |
| CVD | $1053(51.87)$ | $2.46(2.23-2.71),<0.001$ | $1.81(1.65-1.98),<0.001$ | $1.60(1.45-1.75),<0.001$ |
| Anti-oxidant diet | $567(30.16)$ | Ref. | Ref. | Ref. |
| Pro-oxidant diet | $2370(35.18)$ | $1.33(1.16-1.51),<0.001$ | $1.36(1.20-1.55),<0.001$ | $1.23(1.07-1.42), 0.004$ |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

Table S6. Sensitivity Analyses of the joint association between CVD and DOBS status and all-cause mortality among US older adults excluding participants who died within two years of follow-up, NHANES 2003-2014 ( $\mathrm{n}=8616$ ).

| Morality outcome |  | Hazard ratio (95\% CI) |  |  |
| :--- | :--- | :--- | :--- | :--- |
|  | death (\%) | Crude model | Model 1 | Model 2 |
| All-causes |  |  |  |  |
| $\quad$ Non-CVD \& Anti-oxidant diet | $380(25.75)$ | Ref. | Ref. | Ref. |
| $\quad$ Non-CVD \& Pro-oxidant diet | $1504(29.43)$ | $1.23(1.06-1.44), 0.007$ | $1.23(1.08-1.41), 0.003$ | $1.12(0.97-1.31), 0.132$ |
| CVD \& Anti-oxidant diet | $187(46.29)$ | $2.14(1.69-2.71),<0.001$ | $1.47(1.17-1.86), 0.001$ | $1.28(1.01-1.63), 0.041$ |
| $\quad$ CVD \& Pro-oxidant diet | $866(53.26)$ | $3.13(2.65-3.69),<0.001$ | $2.32(1.99-2.71),<0.001$ | $1.90(1.60-2.26),<0.001$ |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

Table S7. Sensitivity Analyses of the association between DOBS status and all-cause mortality among US older adults in CVD and non-CVD cohorts excluding participants who died within two years of follow-up, NHANES 2003-2014 ( $\mathrm{n}=8616$ ).

| Morality outcome | death (\%) | Hazard ratio (95\% CI) |  |  | P for interaction in Model 2 |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Crude model | Model 1 | Model 2 |  |
| All-causes |  |  |  |  | 0.040 |
| Non-CVD cohorts |  |  |  |  |  |
| Anti-oxidant diet | 380 (25.75) | Ref. | Ref. | Ref. |  |
| Pro-oxidant diet | 1504 (29.43) | $\begin{aligned} & 1.23 \text { (1.06-1.44), } \\ & 0.007 \end{aligned}$ | $\begin{aligned} & 1.26 \text { (1.1-1.44), } \\ & 0.001 \end{aligned}$ | $\begin{aligned} & 1.11(0.95-1.30), \\ & 0.198 \end{aligned}$ |  |
| CVD cohorts |  |  |  |  |  |
| Anti-oxidant diet | 187 (46.29) | Ref. | Ref. | Ref. |  |
| Pro-oxidant diet | 866 (53.26) | $\begin{aligned} & 1.46 \text { (1.16-1.84), } \\ & 0.001 \end{aligned}$ | $\begin{aligned} & 1.49 \text { (1.16-1.9), } \\ & 0.002 \end{aligned}$ | $\begin{aligned} & 1.51(1.17-1.95), \\ & 0.002 \end{aligned}$ |  |

Crude model, adjusted for no covariates. Model 1, adjusted for age and sex. Model 2, adjusted for model 1 plus ethnicity, marital status, education, smoking status, physical activity, BMI, hypertension, diabetes mellitus, and dietary energy intake. CVD, cardiovascular disease.

