1  **Supplementary data**

2  **Supplemental Table 1:** Prescribed daily dietary intakes[1] of the Mediterranean-style eating pattern menus

| | **Med-Red Pattern** | **Med-Control Pattern** |
|---|---|---|
| Energy (kcal) | $2600 \pm 428$ | $2570 \pm 405^{\dagger}$ |
| Protein (%en) | $18 \pm 0$ | $19 \pm 1^{\dagger}$ |
| Carbohydrate (%en) | $42 \pm 1$ | $42 \pm 2$ |
| Fat (%en) | $40 \pm 1$ | $40 \pm 1$ |
| Monounsaturated fat (%en) | $22 \pm 1$ | $21 \pm 1^{\dagger}$ |
| Polyunsaturated fat (%en) | $8 \pm 0$ | $9 \pm 1^{\dagger}$ |
| Saturated fat (%en) | $7 \pm 0$ | $8 \pm 0^{\dagger}$ |
| Sodium (mg) | $2640 \pm 354$ | $2600 \pm 317$ |
| Potassium (mg) | $4860 \pm 624$ | $4330 \pm 653^{\dagger}$ |
| Magnesium (mg) | $490 \pm 96$ | $483 \pm 74$ |

Results are presented as unadjusted means $\pm$ SD (n=41); [1]averaged across 7-day menu cycle; %en= % of total energy; $^{\dagger}$denotes a difference between Med-Red and Med-Control indicated by a paired t-test, *P*<0.05. This material was reproduced from [19] with permission of Oxford University Press.

3   **Supplementary data**

4   **Supplemental Table 2:** Prescribed daily and weekly food group servings for the median energy intake level[1]

|  | Med-Red Pattern | Med-Control Pattern |
|---|---|---|
| Fruits per day (servings[2]) | 4 | 4 |
| Vegetables per day (servings[3]) | 7 | 8 |
| Dark green vegetables | 1 | 2 |
| Red and orange vegetables | 1 | 1 |
| Legumes | 1 | 1 |
| Starchy vegetables | 1 | 1 |
| Other vegetables | 3 | 3 |
| Grains per day (servings[4]) | 4 | 5 |
| Whole grains | 4 | 4 |
| Refined grains | 0 | 1 |
| Protein-rich foods per week (g[5]) | | |
| Red meat | 476 | 196 |
| Poultry | 112 | 420 |
| Seafood | 336 | 336 |
| Whole eggs | 2 | 3 |
| Nuts, seed, soy[6] | 560 | 616 |
| Dairy per day (servings[7]) | 3 | 2 |
| Olive oil per week (g[8]) | 247 | 247 |
| 14-point Mediterranean Diet Assessment Tool Score (20) | 12 | 13 |

[1] Food group servings presented for representative 2492 kcal Med-Red and Med-Control averaged across 7-day menu cycle, [2] ½ cup or 1 medium fresh fruit, [3] ½ cup fresh or 1 cup leafy, [4] 28 g= ½ cup or 1 oz, [5] 28 g= 1 oz; cooked weights, [6] 28 g=1 tbsp. nut butter or 1/2 oz nuts/seeds or ~1 oz-equivalent, [7] 1 cup milk or yogurt, [8] 4.5g= 1 tsp. This material was reproduced from [19] with permission of Oxford University Press.

**Supplementary data**

**Supplemental Table 3:** Changes in daily mood states[1] of adults who are overweight or obese after 5 weeks of following a Mediterranean Pattern with different amounts of lean unprocessed red meat

| Mood, au[2] | Med-Red Pattern | | | Med-Control Pattern | | | *P* value[3] | |
|---|---|---|---|---|---|---|---|---|
| | Baseline | Post | Change | Baseline | Post | Change | Time | Time x pattern |
| Tension (0-24) | $2.2 \pm 0.3$ | $1.9 \pm 0.4$ | $-0.3 \pm 0.2$ | $1.8 \pm 0.3$ | $1.6 \pm 0.3$ | $-0.2 \pm 0.2$ | 0.11 | 0.72 |
| Depression (0-32) | $1.4 \pm 0.3$ | $1.3 \pm 0.4$ | $-0.1 \pm 0.2$ | $1.1 \pm 0.3$ | $1.0 \pm 0.3$ | $-0.1 \pm 0.2$ | 0.30 | 0.95 |
| Anger (0-28) | $1.7 \pm 0.3$ | $1.5 \pm 0.3$ | $-0.2 \pm 0.2$ | $1.5 \pm 0.3$ | $1.2 \pm 0.3$ | $-0.3 \pm 0.2$ | 0.08 | 0.51 |
| Vigor (0-24) | $4.3 \pm 0.6$ | $4.5 \pm 0.5$ | $0.2 \pm 0.3$ | $4.8 \pm 0.5$ | $4.8 \pm 0.5$ | $0.0 \pm 0.3$ | 0.38 | 0.56 |
| Fatigue (0-24) | $3.1 \pm 0.3$ | $2.5 \pm 0.3$ | $-0.6 \pm 0.3$ | $2.6 \pm 0.3$ | $2.4 \pm 0.3$ | $-0.2 \pm 0.3$ | 0.039 | 0.22 |
| Confusion (0-20) | $1.4 \pm 0.3$ | $1.3 \pm 0.3$ | $-0.1 \pm 0.2$ | $1.1 \pm 0.3$ | $0.9 \pm 0.3$ | $-0.1 \pm 0.2$ | 0.14 | 0.94 |
| Total Mood (100-176) | $105.3 \pm 1.4$ | $104.0 \pm 1.4$ | $-1.3 \pm 0.9$ | $103.2 \pm 1.4$ | $102.3 \pm 1.4$ | $-0.9 \pm 0.9$ | 0.07 | 0.66 |

Results are presented as LS means ± LS mean SEMs, *n*=37, significance set at *P*<0.05. All values were extracted from a doubly repeated-measures ANOVA adjusted for age, sex, and body mass at each time point. [1]measured by the Profile of Mood States questionnaire, [2]arbitrary units, [3]post hoc pattern-specific effects were analyzed when time x diet *P*-interaction <0.05. Med-Control, Mediterranean-style eating pattern with ~200 g/wk of lean unprocessed red meat; Med-Red, Mediterranean-style eating pattern with ~500 g/wk of lean unprocessed red meat.

**Supplementary data**

**Supplemental Table 4:** Changes in perceived sleep of adults who are overweight or obese after 5 weeks of following a Mediterranean Pattern with different amounts of lean unprocessed red meat

| Outcome, au[1] | Med-Red Pattern | | | Med-Control Pattern | | | *P* value[2] | |
|---|---|---|---|---|---|---|---|---|
| | Baseline | Post | Change | Baseline | Post | Change | Time | Time x pattern |
| Sleep duration | 0.0 ± 0.1 | 0.0 ± 0.1 | -0.1 ± 0.1 | 0.0 ± 0.1 | 0.0 ± 0.1 | 0.1 ± 0.1 | 0.46 | 0.23 |
| Sleep disturbances | 1.3 ± 0.1 | 1.2 ± 0.1 | -0.1 ± 0.1 | 1.3 ± 0.1 | 1.2 ± 0.1 | -0.1 ± 0.1 | 0.06 | 0.82 |
| Sleep latency | 0.9 ± 0.1 | 0.8 ± 0.1 | -0.2 ± 0.1 | 0.9 ± 0.1 | 0.9 ± 0.1 | 0.1 ± 0.1 | 0.23 | 0.24 |
| Daytime dysfunction | 0.6 ± 0.1 | 0.5 ± 0.1 | -0.1 ± 0.1 | 0.6 ± 0.1 | 0.5 ± 0.1 | -0.1 ± 0.1 | 0.15 | 0.77 |
| Sleep efficiency | 0.3 ± 0.1 | 0.3 ± 0.1 | 0.0 ± 0.1 | 0.2 ± 0.1 | 0.3 ± 0.1 | 0.1 ± 0.1 | 0.29 | 0.72 |
| Perceived sleep quality | 1.1 ± 0.1 | 0.9 ± 0.1 | -0.3 ± 0.1 | 1.1 ± 0.1 | 0.9 ± 0.1 | -0.2 ± 0.1 | 0.003 | 0.55 |
| Sleeping medication | 0.4 ± 0.1 | 0.4 ± 0.1 | -0.1 ± 0.1 | 0.4 ± 0.1 | 0.3 ± 0.1 | 0.0 ± 0.1 | 0.34 | 0.52 |
| Global sleep score | 5.1 ± 0.4 | 4.3 ± 0.4 | -0.7 ± 0.4 | 4.8 ± 0.4 | 4.6 ± 0.4 | -0.2 ± 0.3 | 0.07 | 0.16 |

Results are presented as LS means ± LS mean SEMs, *n*=39. All values were extracted from a doubly repeated-measures ANOVA adjusted for age, sex, and body mass at each time point. [1]arbitrary units, measured by the Pittsburgh Sleep Quality Index, [2]post hoc pattern-specific effects were analyzed when time x diet *P*-interaction <0.05. No *P* values were robust to Benjamini-Hochberg correction for multiple comparisons. Med-Control, Mediterranean-style eating pattern with ~200 g/wk of lean unprocessed red meat; Med-Red, Mediterranean-style eating pattern with ~500 g/wk of lean unprocessed red meat.