Abstract


Abstract Service

Conclusion: Coffee drinking was associated with reduced risk for death from various causes. This relationship did not vary by country.

Primary Funding Source: European Commission Directorate-General for Health and Consumers and International Agency for Research on Cancer.


Background: Few studies have evaluated the relationship between changes in diet quality over time and the risk of death.

Methods: We used Cox proportional-hazards models to calculate adjusted hazard ratios for total and cause-specific mortality among 47,994 women in the Nurses’ Health Study and 25,745 men in the Health Professionals Follow-up Study from 1998 through 2010. Changes in diet quality over the preceding 12 years (1986–1998) were assessed with the use of the Alternate Healthy Eating Index-2010 score, the Alternate Mediterranean Diet score, and the Dietary Approaches to Stop Hypertension (DASH) diet score.

Results: The pooled hazard ratios for all-cause mortality among participants who had the greatest improvement in diet quality (13 to 33% improvement), as compared with those who had a relatively stable diet quality (0 to 3% improvement), in the 12-year period were the following: 0.91 (95% confidence interval [CI], 0.85 to 0.97) according to changes in the Alternate Healthy Eating Index score, 0.84 (95% CI, 0.78 to 0.91) according to changes in the Alternate Mediterranean Diet score, and 0.89 (95% CI, 0.84 to 0.95) according to changes in the DASH score. A 20-percentile increase in diet scores (indicating an improved quality of diet) was significantly associated with a reduction in total mortality of 8 to 17% with the use of the three diet indexes and a 7 to 15% reduction in the risk of death from cardiovascular disease with the use of the Alternate Healthy Eating Index and Alternate Mediterranean Diet. Among participants who maintained a high-quality diet over a 12-year period, the risk of death from any cause was significantly lower – by 14% (95% CI, 8 to 19) when assessed with the Alternate Healthy Eating Index score, 11% (95% CI, 5 to 17%) when assessed with the Alternate Mediterranean Diet score, and 11% (95% CI, 5 to 16%) when assessed with the DASH score.

Background: The relationship between coffee consumption and mortality in diverse European populations with variable coffee preparation methods is unclear.

Objective: To examine whether coffee consumption is associated with all-cause and cause-specific mortality.

Design: Prospective cohort study.

Setting: 10 European countries.

Participants: 521,330 persons enrolled in EPIC (European Prospective Investigation into Cancer and Nutrition).

Measurements: Hazard ratios (HRs) and 95% CIs estimated using multivariable Cox proportional hazards models. The association of coffee consumption with serum biomarkers of liver function, inflammation, and metabolic health was evaluated in the EPIC Biomarkers subcohort (n = 14,800).

Results: During a mean follow-up of 16.4 years, 41,693 deaths occurred. Compared with nonconsumers, participants in the highest quartile of coffee consumption had statistically significantly lower all-cause mortality (men: HR, 0.88 [95% CI, 0.82 to 0.95]; P for trend < 0.001; women: HR, 0.93 [CI, 0.87 to 0.98]; P for trend = 0.009). Inverse associations were also observed for digestive disease mortality for men (HR, 0.41 [CI, 0.32 to 0.54]; P for trend < 0.001) and women (HR, 0.60 [CI, 0.46 to 0.78]; P for trend < 0.001). Among women, there was a statistically significant inverse association of coffee drinking with circulatory disease mortality (HR, 0.78 [CI, 0.68 to 0.90]; P for trend < 0.001) and cerebrovascular disease mortality (HR, 0.70 [CI, 0.55 to 0.90]; P for trend = 0.002) and a positive association with ovarian cancer mortality (HR, 1.31 [CI, 1.07 to 1.61]; P for trend = 0.015). In the EPIC Biomarkers subcohort, higher coffee consumption was associated with lower serum alkaline phosphatase; alanine aminotransferase; aspartate aminotransferase; β-glutamyltransferase; and, in women, C-reactive protein, lipoprotein(a), and glycated hemoglobin levels.

Limitations: Reverse causality may have biased the findings; however, results did not differ after exclusion of participants who died within 8 years of baseline. Coffee-drinking habits were assessed only once.

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Recapitulated by PKA and mTOR inhibition. These results indicate that a FMD promotes the reprogramming of pancreatic cells to restore insulin generation in islets from T1D patients and reverse both T1D and T2D phenotypes in mouse models.


Calorie restriction or changes in dietary composition can enhance healthy aging, but the inability of most subjects to adhere to chronic and extreme diets, as well as potentially adverse effects, limits their application. We randomized 100 generally healthy participants from the United States into two study arms and tested the effects of a fasting-mimicking diet (FMD) – low in calories, sugars, and protein but high in unsaturated fats – on markers/risk factors associated with aging and age-related diseases. We compared subjects who followed 3 months of an unrestricted diet to subjects who consumed the FMD for 5 consecutive days per month for 3 months. Three FMD cycles reduced body weight, trunk, and total body fat; lowered blood pressure; and decreased insulin-like growth factor 1 (IGF-1). No serious adverse effects were reported. After 3 months, control diet subjects were crossed over to the FMD program, resulting in a total of 71 subjects completing three FMD cycles. A post hoc analysis of subjects from both FMD arms showed that body mass index, blood pressure, fasting glucose, IGF-1, triglycerides, total and low-density lipoprotein cholesterol, and C-reactive protein were more beneficially affected in participants at risk for disease than in subjects who were not at risk. Thus, cycles of a 5-day FMD are safe, feasible, and effective in reducing markers/risk factors for aging and age-related diseases. Larger studies in patients with diagnosed diseases or selected on the basis of risk factors are warranted to confirm the effect of the FMD on disease prevention and treatment.


Importance: Electroacupuncture involving the lumbosacral region may be effective for women with stress urinary incontinence (SUI), but evidence is limited.

Objective: To assess the effect of electroacupuncture vs sham electroacupuncture for women with SUI.

Design, Setting, and Participants: Multicenter, randomized clinical trial conducted at 12 hospitals in China and enrolling 504 women with SUI between October 2013 and May 2015, with data collection completed in December 2015.

Interventions: Participants were randomly assigned (1:1) to receive 18 sessions (over 6 weeks) of electroacupuncture involving the lumbosacral region (n = 252) or sham electroacupuncture (n = 252) with no skin penetration on sham acupoints.

Main Outcomes and Measurements: The primary outcome was change from baseline to week 6 in the amount of urine leakage, measured by the 1-hour pad test. Secondary outcomes included mean 72-hour urinary incontinence episodes measured by a 72-hour bladder diary (72-hour incontinence episodes).

Results: Among the 504 randomized participants (mean [SD] age, 55.3 [8.4] years), 482 completed the study. Mean urine leakage at baseline was 18.4 g

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Results: Among the 504 randomized participants (mean [SD] age, 55.3 [8.4] years), 482 completed the study. Mean urine leakage at baseline was 18.4 g
for the electroacupuncture group and 19.1 g for the sham electroacupuncture group. Mean 72-hour incontinence episodes were 7.9 for the electroacupuncture group and 7.7 for the sham electroacupuncture group. At week 6, the electroacupuncture group had greater decrease in mean urine leakage (-9.9 g) than the sham electroacupuncture group (-2.6 g) with a mean difference of 7.4 g (95% CI, 4.8 to 10.0; \( P < .001 \)). During some time periods, the change in the mean 72-hour incontinence episodes from baseline was greater with electroacupuncture than sham electroacupuncture with between-group differences of 1.0 episode in weeks 1 to 6 (95% CI, 0.2-1.7; \( P = .01 \)), 2.0 episodes in weeks 15 to 18 (95% CI, 1.3-2.7; \( P < .001 \)), and 2.1 episodes in weeks 27 to 30 (95% CI, 1.3-2.8; \( P < .001 \)). The incidence of treatment-related adverse events was 1.6% in the electroacupuncture group and 2.0% in the sham electroacupuncture group, and all events were classified as mild.

Conclusions and Relevance: Among women with stress urinary incontinence, treatment with electroacupuncture involving the lumbosacral region, compared with sham electroacupuncture, resulted in less urine leakage after 6 weeks. Further research is needed to understand long-term efficacy and the mechanism of action of this intervention.

Trial Registration: clinicaltrials.gov Identifier: NCT01784172.


Importance: Acupuncture is used to induce ovulation in some women with polycystic ovary syndrome, without supporting clinical evidence.

Objective: To assess whether active acupuncture, either alone or combined with clomiphene, increases the likelihood of live births among women with polycystic ovary syndrome.

Design, Setting, and Participants: A double-blind (clomiphene vs placebo), single-blind (active vs control acupuncture) factorial trial was conducted at 21 sites (27 hospitals) in mainland China between July 6, 2012, and November 18, 2014, with 10 months of pregnancy follow-up until October 7, 2015. Chinese women with polycystic ovary syndrome were randomized in a 1:1:1:1 ratio to 4 groups.

Interventions: Active or control acupuncture administered twice a week for 30 minutes per treatment and clomiphene or placebo administered for 5 days per cycle, for up to 4 cycles. The active acupuncture group received deep needle insertion with combined manual and low-frequency electrical stimulation; the control acupuncture group received superficial needle insertion, no manual stimulation, and mock electricity.

Main Outcomes and Measures: The primary outcome was live birth. Secondary outcomes included adverse events.

Results: Among the 1000 randomized women (mean [SD] age, 27.9 [3.3] years; mean [SD] body mass index, 24.2 [4.3]), 250 were randomized to each group; a total of 926 women (92.6%) completed the trial. Live births occurred in 69 of 235 women (29.4%) in the active acupuncture plus clomiphene group, 66 of 236 (28.0%) in the control acupuncture plus clomiphene group, 31 of 223 (13.9%) in the active acupuncture plus placebo group, and 39 of 232 (16.8%) in the control acupuncture plus placebo group. There was no significant interaction between active acupuncture and clomiphene (\( P = .39 \)), so main effects were evaluated. The live birth rate was significantly higher in the women treated with clomiphene than with placebo (135 of 471 [28.7%] vs 70 of 455 [15.4%], respectively; difference, 13.3%; 95% CI, 8.0% to 18.5%) and not significantly different between women treated with active vs control acupuncture (100 of 458 [21.8%] vs 105 of 468 [22.4%], respectively; difference, –0.6%; 95% CI, –5.9% to 4.7%). Diarrhea and bruising were more common in patients receiving active acupuncture than control acupuncture (diarrhea: 25 of 500 [5.0%] vs 8 of 500 [1.6%, respectively; difference, 3.4%; 95% CI, 1.2% to 5.6%; bruising: 37 of 500 [7.4%] vs 9 of 500 [1.8%, respectively; difference, 5.6%; 95% CI, 3.0% to 8.2%).

Conclusions and Relevance: Among Chinese women with polycystic ovary syndrome, the use of acupuncture with or without clomiphene, compared with control acupuncture and placebo, did not increase live births. This finding does not support acupuncture as an infertility treatment in such women.

Trial Registration: clinicaltrials.gov Identifier: NCT01573858.


Traditional Chinese medicine (TCM) has more than 2,000 years of history and has gained widespread clinical applications. However, the explicit role of TCM in preventing and treating cardiovascular disease remains unclear due to a lack of sound scientific evidence. Currently available randomized controlled trials on TCM are flawed, with small sample sizes and diverse outcomes, making it difficult to draw definite conclusions about the actual benefits and harms of TCM. Here, we systematically assessed the efficacy and safety of TCM for cardiovascular disease, as well as the pharmacological effects of active TCM ingredients on the cardiovascular system and potential mechanisms. Results indicate that TCM might be used as a complementary and alternative approach to the primary and secondary prevention of cardiovascular disease. However, further rigorously designed randomized controlled trials are warranted to assess the effect of TCM on long-term hard endpoints in patients with cardiovascular disease.