Vitamin E not helpful, perhaps harmful


■ CLINICAL QUESTION
In patients with or without heart disease, does vitamin E supplementation decrease mortality?

■ BOTTOM LINE
Vitamin E supplementation does not decrease all-cause mortality in patients with or without pre-existing heart disease. At higher doses it can actually be harmful, although the deleterious effect is small (number needed to harm [NNH]=250). (level of evidence [LOE]=1b)

■ STUDY DESIGN
Meta-analysis (randomized controlled trials)

■ SETTING
Outpatient (any)

■ SYNOPSIS
The antioxidant property of vitamin E has led many to use it to prevent cardiovascular or cancer-related mortality. However, several studies and several previous meta-analyses have shown either no benefit or a slight increase in mortality with its use.

The authors of this study performed a literature search in the usual way, searching Medline, the Cochrane Clinical Trials Database, and reference lists and files. They included 19 randomized studies of almost 136,000 patients comparing vitamin E with a control or placebo group for at least 1 year and with at least 10 deaths in the trial. Study subjects varied and included elderly patients, healthy adults, and patient with cardiovascular disease.

Study results were analyzed by intention to treat. The method of data extraction was not explained and studies were not graded or selected on the basis of quality. In the studies the baseline death rate was approximately 10%.

Overall, there was no difference in all-cause mortality between the control group and placebo group. However, when comparing low-dose with high-dose vitamin E (less than 400 IU/d vs 400 IU/d or more), differences were found. In the studies of lower doses, there was no benefit or detriment to vitamin E supplementation (relative risk=0.98; 95% confidence interval [CI], 0.96–1.01). When high-dose supplementation was studied separately, the risk was slightly but significantly higher in the supplemented group.
Acupuncture effective for osteoarthritis of the knee


■ CLINICAL QUESTION
Is acupuncture effective in decreasing pain and improving function in patients with osteoarthritis of the knee?

■ BOTTOM LINE
Acupuncture, as compared with sham acupuncture treatment or no treatment, decreases pain scores by an average of 40% and improves function similarly in patients who stick with it. The acupuncture used in this study was based on the Traditional Chinese Medicine meridian theory and was used for the entire 6 months of the study. (LOE=1b)

■ STUDY DESIGN
Randomized controlled trial (double-blinded)

■ ALLOCATION
Concealed

■ SETTING
Outpatient (any)

■ SYNOPSIS
This is the largest and most rigorous study to date of the effect of acupuncture in the treatment of osteoarthritis. The authors enrolled 570 patients who had radiologic and clinical evidence of osteoarthritis of the knee and who had not had any intra-articular injections.

The patients were assigned to 1 of 3 treatment groups: (1) “true acupuncture” based on Traditional Chinese Medicine meridian theory to treat knee joint pain; (2) a sham treatment that mimicked true acupuncture, except that the needles weren’t actually inserted (the acupuncture guiding tubes were tapped at sham points, followed by affixing needles, without insertion, at these sites with adhesive tape); and (3) a control group that received six 2-hour group education sessions lead by a patient education specialist, with follow-up mailed educational materials. Treatment was rendered twice a week for 8 weeks, tapering over the next month to 1 treatment per month, which was continued through the end of the study. This design addresses 2 issues that have plagued previous acupuncture research by providing a sham-treatment as well as a no-treatment group.

At week 14, pain scores using the Western Ontario and McMaster University Osteoarthritis Index (WOMAC) decreased from an initial average score of 8.9 (of a possible 20) by 3.6 units (40% improvement) in the true acupuncture group compared with a 2.7-unit increase in the sham group and a 1.5-unit decrease in the education group. This change with true acupuncture was statistically significant compared with the other 2 groups. Pain scores continued to improve in all 3 groups over the course of the study, though true acupuncture scores continued to improve statistically more than the other 2 groups. Functional deficit diminished from an average 32 units (of a possible 68 at baseline) to 19 units at the end of the study, an almost 40% improvement that was statistically better than the other 2 groups. Patient global assessment scores also improved in the acupuncture group to a statistically greater extent than in either other group. Distance during the 6-minute walk and 36-Item Short-Form Health Survey scores improved more with true and sham acupuncture treatment than with education, but the results were similar between those 2 groups.
Use CCBs as last resort in treatment of hypertension


■ CLINICAL QUESTION
In the treatment of adults with hypertension, which other drug class added to diuretics most effectively reduces adverse cardiovascular events?

■ BOTTOM LINE
In women with hypertension and no history of cardiovascular disease (CVD), a regimen of a diuretic plus either a beta-blocker or angiotensin-converting enzyme (ACE) inhibitor reduces the risk of CVD mortality compared with a diuretic plus calcium channel blocker. The evidence continues to mount that calcium channel blockers should be the agent of last resort in the treatment of most patients with hypertension. (LOE=2b–)

■ STUDY DESIGN
Cohort (prospective)

■ SETTING
Population-based

■ SYNOPSIS
Evidence shows that diuretics are equal to or superior to other agents as first-line therapy for most patients with hypertension. More than 1 drug class, however, is frequently required to control hypertension. It is unclear which other drug classes, added to diuretics, optimally reduce adverse cardiovascular events.

The investigators evaluated data obtained from women with hypertension enrolled in the Women’s Health Initiative Observational Study, a prospective cohort study of 93,676 women aged 50 to 79 years at baseline. Of these, 94% were
followed up for a mean of 5.9 years. Anti-hypertensive medication was determined from original bottles brought to baseline visits and matched to a pharmacy database. Endpoints were ascertained from mailed questionnaires, direct report, telephone follow-up, medical records, and death certificates. The investigators do not specifically state whether outcomes were assessed by individuals blinded to treatment groups.

Among women with hypertension but no history of CVD, monotherapy with calcium channel blockers versus diuretics was associated with an increased risk of CVD death (number needed harm over 6 years [NNH/6]=143; 95% CI, 59–3898). In similar patients, a 2-drug regimen of a diuretic plus calcium channel blocker was associated with a statistically significant increase in CVD death compared with both a diuretic plus beta-blocker and a diuretic plus ACE inhibitor (NNH/6=93; 95% CI, 34–3898). Both analyses were adjusted for age, race/ethnicity, smoking, high cholesterol requiring medication, body mass index, physical activity, hormone use, and diabetes.

Ten years after bariatric surgery: weight loss sustained, diabetes and hypertension reversed


**CLINICAL QUESTION**
How effective is bariatric surgery in the long term?

**BOTTOM LINE**
Bariatric surgery successfully helps patients lose weight and reverse diabetes, hypertension, and some hyperlipidemias. We still do not know whether it affects all-cause mortality. (LOE=2c)
At 2 and 10 years, surgical patients were more likely to have recovered from diabetes and hypertension from elevated total cholesterol.

The most important outcome, however, is all-cause mortality. The authors do not give these results, as the study is continuing under the watchful eye of a data-monitoring committee, which suggests that there are no important difference between the groups so far.

**Guidelines for the treatment of chronic stable angina**


**CLINICAL QUESTION**

In patients with chronic stable angina or those who are asymptomatic but who have evidence of coronary artery disease, what is the appropriate medical management?

**BOTTOM LINE**

In patients who have either chronic stable angina without a history of myocardial infarction or a revascularization procedure in the past 6 months, as well as in asymptomatic patients with demonstrated coronary artery disease, the following should be routine: aspirin; a beta-blocker; an angiotensin-converting enzyme inhibitor; and a statin, if the cholesterol is above normal. (LOE=1a)

**STUDY DESIGN**

Practice guideline

**SETTING**

Various (guideline)

**SYNOPSIS**

The American College of Physicians endorses the American College of Cardiology/American Heart Association guidelines from 2002. The guidelines apply to patients with chronic stable angina who have not had a myocardial infarction (MI) or have undergone revascularization in the past 6 months, as well as patients who are asymptomatic but have demonstrated evidence of coronary artery disease. The strength of the recommendations (SOR) are characterized as follows: A = several randomized clinical trials with large numbers of patients; B = limited number of randomized trials with small numbers of patients, nonrandomized studies, or observational registries; and C = expert consensus.

In patients with chronic stable angina or in asymptomatic patients with evidence of coronary artery disease, the following should be routinely used to decrease the risk of MI or death:

- Aspirin 75 to 325 mg daily (SOR: A). 
- Clopidogrel (Plavix) should only be used if aspirin is contraindicated (SOR: A). Dipyridamole should not be used because of risk of harm (SOR: B).
- A beta-blocker to reduce mortality and MI and to control symptoms (SOR: A).
- An angiotensin-converting enzyme inhibitor. An angiotensin receptor blocker should not be substituted (SOR: A).
- A statin, if cholesterol is above normal (SOR: B).

Symptom control should be managed with:

- Sublingual nitroglycerin (SOR: A)
- A long-acting calcium channel blocker or long-acting nitrate when beta-blockers are ineffective or unsuccessful at controlling symptoms (SOR: B).

For follow-up (SOR: C) the group recommends visits every 4 to 6 months during the first year. Routine cardiac testing is not useful in the absences of a change in history or physical examination.