Green tea gargles prevent influenza

One hundred twenty-four elderly residents of a nursing home in Japan (mean age, 83 years) participated in a three-month study from January to March 2005, in which they gargled with an aqueous solution of green tea catechins (polyphenon E; 200 mcg/ml) (n = 78) three times per day or gargled without the green tea extract (controls; n = 48). The concentration of catechins in the gargles of the active-treatment group was half that of commercially sold green tea beverages. There was no mention of randomization or blinding. All residents were given an influenza vaccine. The incidence of influenza infection was significantly lower in the catechin group than in the control group (1.3% vs. 10.4%; p = 0.028). No adverse effects were reported.

Comment: Catechins are polyphenolic compounds that are present in green tea and certain other plants. Catechins extracted from green tea have been found to inhibit the replication of many different strains of influenza virus in vitro. The results of the present study indicate that gargling three times per day with a green tea extract can reduce the incidence of influenza in vaccinated, elderly, nursing home residents. Whether the same benefit would be seen in community-dwelling people and those who have not received a flu vaccine, and whether regularly drinking green would have a similar effect as gargling, remain to be determined.


DHEA improves bone density

Seventy women and 70 men (aged 60-88 years) with low serum DHEA-sulfate levels were randomly assigned to receive, in double-blind fashion, 50 mg/day of DHEA or placebo for one year. Compared with the change in the placebo group, the mean bone mineral density (BMD) increased in the group as a whole in the total hip (1.0%; p = 0.05), trochanter (1.2%; p = 0.06), and femoral shaft (1.2%; p = 0.05). Compared with placebo, the mean BMD of the lumbar spine increased significantly in women receiving DHEA (2.2%; p = 0.04) but not in men receiving DHEA. Most of these differences were due to the combination of a decrease in BMD in the placebo group and an increase in the DHEA group.

Comment: DHEA is a steroid hormone produced in the adrenal glands, ovaries, and testes. It is metabolized in part to estrogen and testosterone, both of which can help prevent bone loss. In addition, DHEA may have a separate bone-preserving effect that is unrelated to its conversion to other hormones. The results of the present study indicate that administration of DHEA to elderly individuals with low DHEA-S levels improved hip BMD in men and women and lumbar BMD in women. Consequently, correcting DHEA deficiency might help prevent osteoporotic fractures.

Interestingly, a study just published in the New England Journal of Medicine concluded that DHEA has no "physiologically relevant beneficial effects on body composition, physical performance, insulin sensitivity, or quality of life." That study is the subject of my editorial on page 124 of this issue of the Townsend Letter.


Oral zinc supplements prevent colds

Two hundred, healthy Turkish children (mean age, 5.6 years) who had normal serum zinc levels were randomly assigned to receive, in double-blind fashion, 15 mg/day of oral zinc (from zinc sulfate) or placebo for seven months. The dose was increased to twice a day (30 mg/day of zinc) at the onset of cold, until symptoms resolved. The mean number of colds per child was significantly less in the zinc group than in the placebo group (1.2 vs. 1.7; 29.4% reduction; p = 0.003). The mean duration of symptoms per cold was significantly less in the zinc group than in the placebo group (4.7 vs. 5.3 days; 11.3% reduction; p < 0.0001). Adverse effects were mild and were similar in both groups.

Comment: Numerous studies have demonstrated that dissolving zinc lozenges in the mouth every two hours, beginning at the first sign of cold symptoms, can reduce the duration of colds. However, zinc lozenges appear to be effective only in adults. This is the first controlled study to examine whether oral zinc supplements can reduce the incidence or duration of colds. The results are promising.

It should be noted that zinc deficiency is prevalent in some parts of Turkey. While serum zinc levels of the study participants were normal, it is possible that some of them...
had subtle zinc deficiency. Additional research is needed to
determine whether zinc supplementation would be beneficial
for populations in other areas of the world. Long-term
zinc supplementation should be accompanied by a copper
supplement, to prevent zinc-induced copper deficiency.
Kurugol Z, et al. The prophylactic and therapeutic effectiveness of zinc

N-acetylcysteine reduces adverse effects of angioplasty

Three hundred and fifty-four patients undergoing primary
angioplasty were randomly assigned to receive a standard
dose of N-acetylcysteine (NAC) (a 600-mg intravenous
bolus before angioplasty and 600 mg orally twice a day for
48 hours after angioplasty), a double dose of NAC (a 1,200-
mg intravenous bolus and 1,200 mg orally twice a day for 48
hours after intervention), or placebo. The serum creatinine
concentration increased 25% or more in 33% of the control
patients, 15% of those receiving standard-dose NAC, and
eight percent of those receiving high-dose NAC (p < 0.001).
In-hospital mortality was higher in patients with contrast-
medium-induced nephropathy than in those without such
nephropathy (26% vs. 1%; p < 0.001). The mortality rate was
11% in the control group, four percent in the standard-dose
NAC group, and three percent in the high-dose NAC group (p
= 0.02).

Comment: Patients undergoing primary angioplasty (i.e.,
angioplasty as the first-line treatment for acute myocardial
infarction) are administered a contrast medium, which is a
dye that aids in the visualization of the coronary arteries.
These agents are toxic to the kidneys and have the potential
to cause renal damage, which can lead to increased morbidity
and mortality. The results of the present study indicate that
administration of NAC prevented contrast-medium-induced
nephropathy in a dose-dependent manner and reduced
in-hospital mortality in patients undergoing primary
angioplasty. Because of its relative safety and low cost, NAC
prophylaxis should be considered for all patients for whom
primary angioplasty is necessary.

Marenzi G, et al. N-acetylcysteine and contrast-induced nephropathy in

Prebiotics prevent atopic dermatitis in formula-fed infants

Prebiotics (oligosaccharides) in human milk promote the
development of an intestinal flora dominated by bifidobacteria
and lactobacilli. Supplementing formula-fed infants with a
mixture of 90% short chain galacto-oligosaccharides and 10%
long chain fructo-oligosaccharides (a mixture that is similar
to the oligosaccharides present in human milk) produced an
intestinal flora similar to that seen in breast-fed infants.
Based on these findings, 206 infants at risk for atopy
because of a parental history of atopic dermatitis, allergic
rhinitis, or asthma were randomly assigned to receive,
in double-blind fashion, a hydrolyzed protein formula
containing either the prebiotic mixture described above
(0.8 g/100 ml) or placebo (maltodextrin). During the first six
months of life, the cumulative incidence of atopic dermatitis
was significantly lower in the group receiving prebiotics than
in the placebo group (9.8% vs. 23.1%; 58% reduction; p =
0.014).

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Comment: These results demonstrate that supplementing infant formula with a mixture of oligosaccharides similar to those found in human milk reduced the incidence of atopic dermatitis in high-risk infants, presumably by altering bowel flora and thereby modulating the development of the immune system. The more we learn about the composition of human milk, the closer infant formula comes to mimicking the effects of breast-feeding. However, it has been obvious for a long time that infant formula will never be able to provide all the beneficial biochemical effects of human milk. Moreover, bottle-feeding does not promote the same type of mother-infant bonding that breast-feeding does. Therefore, while the improvement of infant formulas is to be encouraged, formula-feeding should be reserved for situations in which breast-feeding is not possible.


Melatonin lowers elevated nocturnal blood pressure

Thirty-eight hypertensive patients (mean age, 64 years) with nocturnal hypertension (mean systolic blood pressure > 125 mm Hg, according to repeated 24-hour ambulatory blood pressure monitoring) who were on stable doses of antihypertensive medication were randomly assigned to receive, in double-blind fashion, 2 mg of sustained-release melatonin or placebo two hours before bedtime for four weeks. Nocturnal systolic blood pressure decreased from 136 mm Hg to 130 mm Hg in the melatonin group (p = 0.011, compared with baseline; p = 0.01, compared with placebo). The reduction in systolic blood pressure was most pronounced between 2 AM and 5 AM (p = 0.002).

Comment: Blood pressure normally declines at night. An impaired nocturnal blood pressure decline is associated with a high risk of cardiovascular events and mortality. Hypertensive patients who do not show a normal nocturnal blood pressure decline have been shown to have a blunted nocturnal surge of melatonin secretion. The results of the present study indicate that the addition of 2 mg of melatonin at night to stable antihypertensive treatment improved nocturnal blood pressure control in patients with nocturnal hypertension.


B vitamins improve symptoms in patients with schizophrenia

Forty-two schizophrenic patients with plasma homocysteine levels >15 micromol/L were randomly assigned to receive, in double-blind fashion, folic acid (2 mg/day), pyridoxine (25 mg/day), and vitamin B6 (400 mcg/day) for three months, and then the alternate treatment for an additional three months. Homocysteine levels decreased with vitamin therapy compared with placebo. The improvement in symptoms of schizophrenia, as measured by the Positive and Negative Syndrome Scale, was significantly greater in the active-treatment group than in the placebo group (p < 0.02). Neuropsychological test results overall, and Wisconsin Card Sort (Categories Completed) test results in particular, were significantly better after vitamin treatment than after placebo.

Comment: Many patients with schizophrenia have elevated homocysteine levels. The results of the present study indicate that treatment with homocysteine-lowering B vitamins improves symptoms of schizophrenia in patients with high homocysteine levels. It is not possible to determine from this study whether the reduction in homocysteine levels per se was the reason these patients improved. Carl Pfeiffer, a pioneer in the orthomolecular treatment of schizophrenia, observed that supplementation with folic acid and vitamin B12 improved psychiatric symptoms in patients with schizophrenia who had low blood levels of histamine. He attributed the improvement in symptoms to an increase in histamine levels. Pfeiffer also noted that folic acid in doses larger than 2 mg/day can interact with antipsychotic medications, resulting in myoclonic jerking with seizures. He further observed that much larger doses of vitamin B6 than those used in the present study were beneficial for schizophrenic patients who excreted kryptopyrrole in their urine.

Schizophrenia is almost certainly a syndrome that can be caused by many different biochemical abnormalities, some of which appear to be responsive to vitamin therapy. The results of the present study will hopefully rekindle interest in the nutritional treatment of this debilitating disease.


Tomatoes inhibit platelet aggregation

Twenty-three healthy volunteers ingested a dose of tomato extract equivalent to six tomatoes. A significant inhibition of ADP-induced platelet aggregation was seen after three hours, and the effect persisted for more than 12 hours. In vitro, the tomato extract inhibited platelet aggregation induced by ADP, collagen, thrombin, and arachidonic acid.

Comment: Excessive platelet activity is associated with an increased risk of cardiovascular disease, and drugs that inhibit platelet aggregation (such as aspirin and clopidogrel [Plavix]) are used in conventional medicine to prevent heart disease. In addition to tomatoes, nutritional inhibitors of platelet aggregation include vitamins C, E, and B6, magnesium, omega-3 and omega-6 fatty acids, garlic, and bromelain. Consumption of large amounts of sucrose has been shown to increase platelet aggregation. Unfortunately, no studies have been done to compare nutritional and pharmaceutical platelet antagonists for the prevention or treatment of cardiovascular disease.
