ALTERNATIVE THERAPIES IN WOMEN'S HEALTH

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Feverfew for the Prevention of Migraine Headache

By Felise Milan, MD

MIGRAINE HEADACHE IS A VERY COMMON, CHRONIC, RECURRENT, and, in some patients, incapacitating disorder. In studies that use the International Headache Society diagnostic criteria, the one-year prevalence of migraine is 15%-18% among women and 6%-9% among men in the United States and Western Europe.[1-3] A more recent population survey found a peak prevalence of 27% in women between the ages of 30-49.[4] Migraine occurs in up to 10% of children ages 5-15 and equally among boys and girls until menarche.[5] In adulthood (ages 25-64), a female-to-male ratio among migraine sufferers of 3:1 is consistent among epidemiological studies.[1] Migraine prevalence decreases after the age of 65, but women continue to be more commonly affected (7.5% of women and 2.5% of men).[4] Almost exclusively, those who suffer from migraine without aura account for the gender difference in migraine prevalence. Migraine with aura occurs equally among men and women.[1]

Migraine Headache in Women

The relationship between migraine and estrogen is well-accepted but has never been explained definitively. Several clinical findings have indicated an influence of female sex hormones on migraine.[6] In young women, onset of migraine is frequently at menarche.[1] Migraines are reported to occur almost twice as often during the two days before menstruation begins ("menstrual migraine").[7] There is 50%-80% improvement of migraine during pregnancy, and altered prevalence in women on oral contraceptives.[6] In addition, the relationship between female hormones and migraine without aura clearly was stronger than in migraine with aura.[1] The physiological mechanism by which estrogen or other female hormones affect migraine is not well understood. Some have suggested that platelet aggregation, fluid and salt retention, or alteration in serotonin and prostaglandin levels could be responsible.[8] Several studies have shown the effectiveness of triptans for prophylaxis of difficult-to-treat menstrual migraine.[9,10]

Preventive Treatment of Migraine

Approach to migraine patients should include a comprehensive

treatment plan including education, identification, and avoidance of triggers and good sleep hygiene, exercise, and utilization of non-pharmacological treatments (i.e., biofeedback, relaxation techniques). Published guidelines recommend that prophylactic pharmacological therapy may be warranted in several circumstances.[11] (*See Table 1.*)

One herb that has been investigated as a prophylactic therapy for migraine headaches is feverfew. Feverfew (*Tanacetum parthenium*) is a perennial in the daisy family. Traditionally, feverfew leaves are used for fever, menstrual irregularities, arthritis, and, most commonly, for prevention of migraine headache. The traditional method of administration is to chew on the leaves.

Mechanism of Action

Feverfew extract has been shown to have biological activity including inhibitory effects on platelet aggregation and on the release of serotonin from platelets and leukocytes.[12] It may interfere with prostaglandin biosynthesis by inhibiting phospholipase A.[13]

Although several active constituents have been identified in feverfew, there is controversy surrounding which of the constituents present in the leaves are responsible for its medicinal effect. Previously, it had been assumed that parthenolide (a sesquiterpene lactone) represented the active component responsible for its effect on migraine headache.

Chrysanthenyl acetate, an essential oil and component in feverfew leaf, is another active ingredient that inhibits prostaglandin synthesis and has analgesic properties.[13] In addition, melatonin has been found in large quantities in feverfew leaves.[14] There is evidence that melatonin may play a role in women who suffer from menstrual migraine.[15]

Clinical Studies

Several randomized controlled trials and two systematic reviews have evaluated the efficacy of feverfew as a prophylactic treatment for migraine headaches. The first review described five double-blind, randomized controlled trials on feverfew monopreparations.[16] The reviewers concluded that, "The majority of studies favor feverfew over placebo. Yet important caveats exist. The clinical effectiveness of feverfew in the prevention of migraine has not been established beyond a reasonable doubt."

One of the six studies included in the second review evaluated the in vivo effect of feverfew on serotonin uptake and platelet activity in 20 migraine sufferers.[17] It did not measure effect on migraine prevention. Four studies[18-21] also are reviewed in the latest systematic review by the Cochrane Collaboration[22] in addition to a newer study by Pfaffenrath.[23]

A double-blind, randomized controlled pilot study identified 17 patients with eight or fewer migraines per month who had been using raw feverfew leaves for at least two years.[19] These patients were randomized to receive either placebo or two 25 mg capsules per day of powdered freeze-dried feverfew leaves for 24 weeks. All patients recorded the frequency of migraine and nausea and vomiting. The placebo group recorded a significant increase ($P < 0.02$) in the number of migraines while the feverfew group remained constant. The number of attacks associated with nausea and vomiting was significantly fewer in the feverfew group (42% vs. 79%) ($P < 0.05$). The bouts of nausea and vomiting also were reduced significantly in the feverfew group (39 vs. 116) ($P < 0.05$).

Murphy also studied the effect of dried feverfew leaves.[20] After a one-month placebo run-in period, 72 patients with common or classic migraine were randomized to receive either 82 mg/d of dried feverfew leaves in a capsule or placebo for four months. Patients then were crossed over to the other group for another four months. There was no washout period. Patients recorded migraine symptoms in a diary. There was a significant decrease in

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Table 1

Guidelines for use of prophylactic therapy for migraine[11]

1. Recurring migraine that significantly interferes with the patient's daily routine despite acute treatment. Two or more attacks a month that produce disability lasting more than three days or headaches that are less frequent but produce very profound disability.
2. Lack of success with use of abortive migraine therapies, including: lack of efficacy, side effects, and contraindications for use.
3. Overuse of abortive or analgesic medications.
4. Migraine attacks which carry a risk of permanent neurological injury (e.g., Hemiplegic migraine).
5. Increased or increasing frequency (more than two per week) with the risk of rebound headache from abortive therapies.
6. Patient preference for a preventive approach.

migraine frequency ($P < 0.05$) in the group receiving feverfew. The number of migraines accompanied by nausea and vomiting was greater in the placebo group ($P < 0.02$). Patients used a visual analogue scale to report a global assessment of efficacy and indicated a significant difference in favor of feverfew ($P < 0.0001$). The benefit of feverfew over placebo for migraine frequency, as well as global assessment of efficacy, was greater in patients with classical migraine than common migraine.

In another crossover RCT evaluating dried feverfew, 57 patients with migraine received 100 mg/d of feverfew for two months during the open phase of the trial.[21] One group continued taking feverfew while the other was given placebo (double-blind) for 30 days; the groups then were crossed over to the other arm for another 30 days. At the end of the open phase of the trial, there was a significant decrease in migraine severity (reported by patients on a scale of 1 to 10) as compared to baseline ($P < 0.001$). The group randomized to feverfew continued to report a reduction in migraine severity and nausea and vomiting, with the placebo group reporting an increase in severity ($P < 0.01$). The results were the same for the second phase of the crossover.

Two other studies have used a different kind of feverfew preparation. de Weerdt randomized 50 patients with migraine to receive either placebo or a capsule with 143 mg of an alcoholic feverfew extract standardized to parthenolide content in a crossover design.[18] Prior to the two 2-month crossover treatment periods was a one-month placebo run-in period. This study found no difference between groups in the number or severity of migraines or the number of work days lost.

Most recently, Pfaffenrath evaluated a CO2 feverfew extract in a multicenter, double-blind, randomized controlled trial.[23] After a four-week baseline period, 147 patients with migraine were randomly assigned to one of three doses (2.08 mg/d, 6.25 mg/d, 18.75 mg/d) of the extract or placebo for 12 weeks. Analysis of primary (frequency of migraine) and secondary (missed days of work, maximum intensity of migraines, and migraines with confinement to bed) outcomes were performed using an intention-to-treat analysis on the whole group as well as on a preselected subset of patients ($n = 49$) experiencing four or more migraines in the baseline four weeks. After a 24% dropout rate, there was no treatment benefit seen for any of the three doses in the overall sample. However, in the preselected subset, the group receiving 6.25 mg/d feverfew extract had a statistically significant average decrease of 1.8 ± 1.5 attacks during the course of the study. In addition, the secondary efficacy parameters improved in a significant dose-response relationship in this subset.

Dosage and Formulation

Many feverfew medicinal preparations are standardized to 0.2%-0.7% parthenolide. However, a study using an alcoholic extract of feverfew standardized to 0.35% parthenolide found it ineffective for preventing migraine.[18] As the above studies illustrate, the most effective preparations use encapsulated dried feverfew leaves. However, there is some controversy over how the leaves should be dried. Some authors and manufacturers insist on the superiority of freeze-dried leaves and claim that using high temperatures to dry the leaves denatures some of the active ingredients. There also is concern that the parthenolide content of the preparations may decrease over time. This loss may accelerate when the herb is stored in heat or light.[24]

Safety

There are no consistently reported adverse effects after using feverfew for up to four months. There are some reports of mouth ulcerations when the raw feverfew leaves are chewed.[25] A post-feverfew syndrome, which includes migraine symptoms, anxiety, insomnia, and muscle and joint stiffness, was reported in one study by the patients who had been using feverfew for a number of years and then stopped.[19] Unlike some of the pharmaceuticals used for migraine prophylaxis, feverfew does not affect blood pressure, heart rate, body weight, or blood chemistry. Anyone who is allergic to the Asteraceae/Compositae family (ragweed, chrysanthemums, marigolds, or daisy) could have an allergic

Table 2

Summary of feverfew studies

First Author	N	Preparation/Dose	Methods	Results
Johnson[19] 1985	17	Powdered feverfew capsule 50 mg/d	Patients who had taken feverfew leaves were randomized to feverfew or placebo (withdrawal) for 6 months	Increased frequency of headaches, nausea, and vomiting in placebo group ($P < 0.02$).
Murphy[20] 1988	72	Powdered feverfew capsule 82 mg/d	Patients with common or classic migraine had 1-month placebo run-in, followed by 4 months of feverfew or placebo then crossover for 4 months.	Reduced frequency of migraines ($P < 0.005$) and nausea and vomiting ($P < 0.002$). No change in duration or severity of headache.
de Weerdt[18] 1996	50	Alcoholic feverfew extract 143 mg/d	Patients with migraine (with or without aura) had 1-month placebo run-in followed by 2 months of feverfew extract or placebo then crossover for 2 months	No significant effect on frequency, severity of attacks, or number of work days lost.
Palevitch[21] 1997	57	Powdered feverfew capsule 100 mg/d	Patients with migraine as diagnosed by MD had 2-month treatment with feverfew (open label) followed by 30 days of feverfew or placebo then crossover for another 30 days	During open phase, significant reduction of migraine frequency and severity. During crossover, further decrease in migraine severity ($P < 0.01$) and nausea and vomiting ($P < 0.001$) in feverfew group, and increase in symptoms in placebo group.
Pfaffenrath[23] 2002	147	CO2 feverfew extract 2.08 mg, 6.25 mg, or 18.75 mg each tid	Patients with migraine with or without aura were randomized to placebo or one of three doses for 12 weeks after 4-week baseline period	Compared last 4 weeks to baseline, intention-to-treat analysis. No significant difference in migraine frequency in overall group. Reduced frequency of migraine in pre-planned subset with 4 or more migraines per month at baseline (confidence interval 0.29-1.46).

reaction to feverfew. Feverfew inhibits platelet-activating factor so patients should be instructed to stop taking feverfew prior to surgical or invasive procedures.[12]

Conclusion

In summary, the three studies that have evaluated powdered or dried whole feverfew leaves have shown significant benefits, including reduced frequency and severity of headaches, for patients with migraines.[19-21] The two studies that have used feverfew extracts largely have been unable to show such an effect.[18,23] Of note, the latest Cochrane review on feverfew includes these same five studies[18-21,23] and reaches a very different conclusion: "There is insufficient evidence from randomized, double-blind trials to suggest an effect of feverfew over and above placebo for preventing migraine."[22] Curiously, the two reviews on feverfew were done by the same authors and included the same studies except for the most recent one by Pfaffenrath.[23]

Recommendation

Many patients suffer from chronic and recurrent migraines. Many are ambivalent about taking a daily medication to prevent these headaches and others cannot tolerate the side effects of the pharmaceutical agents used for prophylaxis. Feverfew should be strongly considered as an effective alternative prophylactic therapy for migraine headaches. Preparations of dried whole feverfew leaves should be used. Although there are many active ingredients in feverfew extracts, it is not clear which if any are responsible for feverfew's effect on migraine headache. There are no data showing the extracts of feverfew are effective in preventing migraines. ❖

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What To Do About the Pain of No More Vioxx?

Source: Bruyere O, et al. Glucosamine sulfate reduces osteoarthritis progression in postmenopausal women with knee osteoarthritis: Evidence from two 3-year studies. *Menopause* 2004;11:138-143.

Abstract: This study was designed to investigate the effect of glucosamine sulfate on long-term symptoms and structure progression in postmenopausal women with knee osteoarthritis (OA). This study consisted of a preplanned combination of two 3-year, randomized, placebo-controlled, prospective, independent studies evaluating the effect of glucosamine sulfate on symptoms and structure modification in OA and post-hoc analysis of the results obtained in postmenopausal women with knee OA. Minimal joint space width was assessed at baseline and after three years from standing anteroposterior knee radiographs. Symptoms were scored by the algo-functional WOMAC index at baseline and after three years. All primary statistical analyses were performed in intention-to-treat, comparing joint space width and WOMAC changes between groups by ANOVA. Of 414 participants randomized in the two studies, 319 were postmenopausal women. At baseline, glucosamine sulfate and placebo groups were comparable for demographic and disease characteristics, both in the general population and in the postmenopausal women subset. After three years, postmenopausal participants in the glucosamine sulfate group showed no joint space narrowing (joint space change of +0.003 mm [95% confidence interval {CI} -0.09 to 0.11]), whereas participants in the placebo group experienced a narrowing of -0.33 mm (95% CI -0.44 to -0.22; $P < 0.0001$ between the two groups). Percent changes after three years in the WOMAC index showed an improvement in the glucosamine sulfate group (-14.1% [95% CI -22.2 to -5.9]) and a trend for worsening in the placebo group (5.4% [95% CI -4.9 to 15.7] [$P = 0.003$] between the two groups). This analysis, focusing on a large cohort of postmenopausal women, demonstrated for the first time that a pharmacological intervention for OA has a disease-modifying effect in this particular population, the most frequently affected by knee OA.

Source: Najm WI, et al. S-adenosyl methionine (SAMe) versus celecoxib for the treatment of osteoarthritis symptoms: A double-blind cross-over trial. *BMC Musculoskelet Disord* 2004;5:6.

Abstract: S-adenosylmethionine (SAMe) is a dietary supplement used in the management of OA symptoms. Studies evaluating SAMe in the management of OA have been limited to non-steroidal anti-inflammatory drugs (NSAIDs) for comparison. The present study compares the effectiveness of SAMe to a cyclooxygenase-2 (COX-2) inhibitor (celecoxib) for pain control and functional improvement, and to decrease side effects in people with OA of the knee. This randomized double-blind crossover study compared SAMe (1,200 mg) with celecoxib (Celebrex 200 mg) for 16 weeks to reduce pain associated with OA of the knee. Sixty-one adults diagnosed with OA of the knee were enrolled and 56 completed the study. Subjects were tested for pain, functional health, mood status, isometric joint function tests, and side effects. At the end of the first month of Phase 1, celecoxib

showed significantly more reduction in pain than SAMe (P = 0.024). By the second month of Phase 1, there was no significant difference between both groups (P < 0.01). The duration of treatment and the interaction of duration with type of treatment were statistically significant (Ps ≤ 0.029). On most functional health measures both groups showed a notable improvement from baseline; however, no significant difference between SAMe and celecoxib was observed. Isometric joint function tests appeared to be steadily improving over the entire study period regardless of treatment. SAMe has a slower onset of action but is as effective as celecoxib in the management of symptoms of knee OA. Longer studies are needed to evaluate the long-term effectiveness of SAMe and the optimal dose to be used.

■ COMMENTS BY MARY L. HARDY, MD

IN SEPTEMBER OF THIS YEAR, MERCK ANNOUNCED THE voluntary withdrawal of refecoxib (Vioxx), the most common COX-2 selective non-steroidal anti-inflammatory (NSAID), from the market because of an increased risk of cardiovascular events.[1] Experts have suggested that cardiovascular risk may be increased for all COX-2 inhibitors.[2] Such concerns leave millions of osteoarthritis (OA) patients and their health care providers with a dilemma—how to get relief from the most common cause of musculoskeletal pain without risking cardiovascular complications or increasing the risk of gastrointestinal bleeding? Two commonly used dietary supplements may be part of the answer.

Glucosamine sulfate is the second most commonly used over-the-counter medication for OA.[3] In this instance, the consumer-patients are onto something. A large meta-analysis has demonstrated significant relief of OA symptoms by glucosamine, either alone or in combination with chondroitin sulfate.[4] Early data in these studies, intriguingly, suggested that glucosamine actually might reverse or ameliorate the basic disease process of OA—the destruction of intra-articular cartilage. The first study for consideration this month looks at the effect of oral glucosamine sulfate on disease progression in postmenopausal women.

Bruyere and colleagues combined and reanalyzed data on postmenopausal women from two previously conducted studies.[5] Both studies were randomized, double-blind, placebo-controlled trials designed to test the effects of 1,500 mg/d of glucosamine sulfate given for three years on both symptom relief and progression of disease. Data were included for all postmenopausal women in both trials (n = 319 of 414 total patients). Prior to intervention, treatment and placebo groups were comparable for demographics and disease severity. Likewise, there were no differences between the postmenopausal women and the rest of the subjects not included in this analysis with respect to age or disease severity. Symptoms and functionality were assessed using a standardized scale (WOMAC). Joint space was measured using a standing anteroposterior X-ray; a wider joint space correlates with a larger amount of intra-articular cartilage. After three years, not only did the WOMAC scale results improve, but the disease progress in the treatment group was stabilized. The WOMAC scales improved 14% with treatment, while the placebo group worsened (P = 0.003). The joint space of treated women did not increase in these studies, but this was still significantly better than the placebo group where the joint space actually narrowed by 0.33 mm (P < 0.0001). These highly significant results demonstrate that not only did glucosamine relieve pain, but it stabilized the underlying disease process. This finding is exciting, because neither NSAIDs nor acetaminophen, the most popular treatments for OA, do anything to change disease progression.

A second dietary supplement of interest for the treatment of OA, S-adensylmethionine (SAMe), is better known as an antidepressant than an anti-inflammatory. However, SAMe has been shown in a recent meta-analysis to be effective at relieving symptoms of OA in both placebo controlled trials as well as in comparison to non-selective NSAIDs.[7] Since we are looking for a reasonable substitute for COX-2 inhibitors, a more recent study by Najm et al, which compares SAMe to celecoxib (Celebrex), is appropriate to consider more closely.[8]

Sixty-one adults with OA of the knee were enrolled in a randomized, double-blind, crossover trial. Patients were given either 600 mg of SAMe or 100 mg of celecoxib twice daily for eight weeks. After a one-week washout period, subjects were crossed over to the alternate treatment. Pain, functionality, mood, and activity impairment were tested using standard scales. After the first four weeks of treatment, the COX-2 inhibitor was superior to SAMe for symptom relief, but after an additional four weeks of treatment, there was no difference in efficacy between groups. This difference also was noted for patients who crossed over from celecoxib to SAMe. Their pain was greater in the first month of treatment, but no different after that. Tests of function, mood, and general well-being were not different between treatments at any time. It is interesting to note that the pain relief from SAMe continued to increase throughout treatment and had not plateaued by the end of the trial period. So, it is possible that the benefit of SAMe would be even better than demonstrated in this trial given longer use.

A word about the safety profile of both of these medications is indicated, since that was what started us on this search. Glucosamine is very well-tolerated, with only mild gastrointestinal side effects reported. Concern

had been raised that glucosamine might decrease glucose control in diabetics. A randomized controlled trial using 1,500 mg of glucosamine with 1,200 mg of chondroitin in Type 2 diabetics for 90 days showed no adverse effects on glucose control.[9] SAMe is likewise well-tolerated with the exception of mild gastrointestinal symptoms and the uncommon possibility of triggering mania in a depressed patient, a possibility with any antidepressant.[7] The greatest challenge to using adequate doses of SAMe is price. The dose of 1,200 mg/d may be out of the range of some consumers. Products that combine the full dose of glucosamine with a more modest dose of SAMe have been developed and should be considered for patients where cost of SAMe is an issue. Both of these products have been tested in multiple clinical trials involving large numbers of patients for significant time periods without serious problems. Both of these products are different from NSAIDs—they require a significant time period to work (at least 4-8 weeks) and require chronic use to maintain efficacy.

Therefore, when your patients ask you, "What can I use now that my Vioxx is taken off the market?" it would be appropriate to consider both glucosamine and SAMe, which have been shown to be safe and effective for the treatment of OA. ❖

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CE Objectives

After reading *Alternative Therapies in Women's Health*, the health care professional will be able to:

1. evaluate alternative medicine and complementary therapies for women's health concerns;
2. identify risks and interactions associated with alternative therapies;
3. discuss alternative medicine options with patients; and
4. offer guidance to patients based on latest science and clinical studies regarding alternative and complementary therapies.

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CE / CME Questions

41. Which form of feverfew has been shown to be most effective in reducing symptoms of migraine in clinical trials?

a. Dried whole feverfew leaves
b. CO2 feverfew extracts
c. Alcoholic feverfew extracts

42. Which symptoms of migraine appear to be reduced in clinical trials of feverfew?

a. Frequency of headache
b. Severity of headache
c. Attacks of nausea and vomiting
d. All of the above

43. Glucosamine and S-adensylmethionine (SAMe), which can be considered for patients with osteoarthritis who have recently stopped taking Vioxx, take from 4-8 weeks to work.

a. True
b. False

Answers: 41. a, 42. d, 43. a.

Qualified Health Claims for Omega-3 Fatty Acids

The U.S. Food and Drug Administration (FDA) has announced a qualified health claim for reduced risk of coronary heart disease (CHD) on conventional foods that contain the omega-3 fatty acids eiscosapentaenoic acid (EPA) and docosahexaenoic acid (DHA).

Typically, EPA and DHA are contained in oily fish, such as salmon, lake trout, tuna, and herring. Although these fatty acids are not essential to the diet, scientific evidence indicates that they may help reduce CHD.

A qualified health claim on a conventional food must be supported by credible scientific evidence. Based on a systematic evaluation of the available scientific data, FDA is announcing a qualified health claim for EPA and DHA omega-3 fatty acids. Although this research is not conclusive, FDA intends to exercise its enforcement discretion with respect to the following qualified health claim:

> Supportive but not conclusive research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease. One serving of [name of food] provides [x] grams of EPA and DHA omega-3 fatty acids. [See nutrition information for total fat, saturated fat and cholesterol content.]

In 2000, FDA announced a similar qualified health claim for dietary supplements containing EPA and DHA omega-3 fatty acids and the reduced risk of CHD. FDA recommends that consumers not exceed more than a total of 3 g/d of EPA and DHA omega-3 fatty acids, with no more than 2 g/d from a dietary supplement.

Herbal Cholesterol Medicine May Break Down Prescription Drugs

Researchers at the University of Kansas in Lawrence have discovered that a cholesterol-lowering herbal drug also produces an unwanted side effect: It accelerates the breakdown of prescription drugs that fight the effects of AIDS and cancer. Experiments showed that guggulsterone, the active ingredient in the herbal drug gugulipid, turns on a cell receptor called PXR. This, in turn, triggers a liver enzyme that breaks down almost 60% of the prescription drugs on the market. The results were published in the August *Journal of Pharmacology and Experimental Therapeutics*.

Drugs affected by guggulsterone include AZT, anticancer agents, and cholesterol-lowering statins. The liver enzyme also can turn some chemicals that do not cause cancer into carcinogens, the researchers say.

The PXR cell receptor is one of three that guggulsterone stimulates. Earlier studies had shown that guggulsterones lower cholesterol by turning down the activity of a receptor known as FXR. The researchers decided to experiment with the herbal gugulipid, which they bought at a Lawrence health food store, and with the pure form, guggulsterone, to see whether other receptors also were implicated in its effect on the body. The two other receptors activated by guggulsterone in the study were the estrogen receptor and the progesterone receptor.

Maximizing Health Benefits of Drinking Tea

The October *Harvard Women's Health Watch* is helping readers get the most health benefits out of their cups of tea. Tea's health benefits are due largely to its high content of flavonoids—plant-derived antioxidants. Green tea is the best food source of catechins, which are more powerful than vitamins C and E in halting oxidative damage to cells and appear to have other disease-fighting properties. Studies have found an association between consuming green tea and a reduced risk for several cancers, including, skin, breast, lung, colon, esophageal, and bladder.

Benefits for regular consumers of green and black teas include a reduced risk for heart disease. The antioxidants in green, black, and oolong teas can help block the oxidation of LDL cholesterol, increase HDL cholesterol, and improve artery function. A study published recently in the *Archives of Internal Medicine* showed a 46%-65% reduction in hypertension risk in regular consumers of oolong or green tea, compared to non-tea drinkers.

Here are some tips from the article on how to get the most out of tea-drinking:

- Drink a cup of tea several times a day to absorb antioxidants. In green-tea drinking cultures, the usual amount is three cups per day.
- Allow tea to steep 3-5 minutes to bring out catechins.
- Freshly brewed tea is the best source of catechins and other flavonoids. Decaffeinated, bottled ready-to-drink, and instant teas have less of these compounds.
- Tea can impede the absorption of iron from fruits and vegetables. Adding lemon or milk or drinking tea between meals will counteract this problem. ❖

In Future Issues:

Tai Chi for Fall Prevention

Alternative Therapies for Colon Cancer