



HEALTH

Nutrition Quackery

no. 9.350

by J. Anderson, L. Young, and J. Roach¹ (Revised 12/08)

Ten Red Flags for Consumers

1. Recommendations that promise a quick fix.
2. Dire warnings of danger from a single product or regimen.
3. Claims that sound too good to be true.
4. Simplistic conclusions drawn from a complex study.
5. Recommendations based on a single study.
6. Dramatic statements that are refuted by reputable scientific organizations.
7. Lists of “good” and “bad” foods.
8. Recommendations made to help sell a product.
9. Recommendations based on studies published without peer review.
10. Recommendations from studies that ignore differences among individuals or groups.

**Colorado
State**
University

Extension

It has been reported that in 2007, Americans spent \$39.5 billion on complementary and alternative medicine (CAM) services in search of short cuts or simple solutions to better health. Health fraud can be defined as misinformation about health, ranging from a self-proclaimed medical expert who has discovered a miracle cure, to a food supplement or drug that is promoted with unproven health claims.

A person who pretends to be able to cure a disease or health problem is defined as a quack. Problems that help promote quackery include:

- Lack of laws to prevent someone from selling anything as long as it is called a dietary supplement.
- Almost anyone can call himself or herself a nutritionist. Thousands of people who call themselves nutritionists have dubious credentials from nonaccredited schools.
- Research scientists who go public with their findings before their study has been published in a peer reviewed journal or duplicated, thus causing consumer confusion about what to believe.

A product may state that you can eat all you want and still lose weight, or that it can help overcome the aging process, arthritis and even cancer. These products usually do nothing to improve health and often are expensive. Even worse, they can be harmful or delay necessary medical treatment.

Targets of Questionable Treatments

Alternative treatments are designed to appeal to anyone, but certain conditions and populations are more likely to be targeted:

- The unsuspecting who are unable to question things critically. To them, all health claims seem to make sense.
- The naive who are looking for a magic cure. They believe that printed or spoken claims must be true.
- The desperate who have incurable or potentially fatal diseases and are hoping for a cure that medical science has not yet been able to provide.
- The alienated who feel animosity toward medicine or the scientific community.

Aging

A government study found that most victims of health care fraud are over the age of 65. The normal aging process is fertile ground for questionable treatments. Many products claim to reverse or delay conditions associated with aging. Cosmetics and creams are said to erase wrinkles or cure baldness. Vitamins and minerals are said to cure or prevent disease or even lengthen life. A healthy lifestyle may help delay conditions associated with aging, but no special preparation or process can stop the natural progression of aging.

Arthritis

Individuals who suffer from chronic illnesses often turn to questionable treatments. Arthritis is a painful and sometimes debilitating disease that has no cure. However, it can go into spontaneous remission, meaning that pain and swelling can disappear for days, weeks, months or even years. When people experience such a remission, they are easily convinced that whatever they have been doing brought the relief. Thus, unproven miracle cures for arthritis flourish.

Examples of unproven remedies include vibrating chairs, sitting in abandoned uranium mines, unapproved drug treatments and questionable diets such as gin-soaked raisins. Since there is no cure for arthritis, these treatments not only are ineffective, but they can do considerable harm in addition to delaying proper diagnosis and treatment. People who suffer from arthritis should see a physician for therapy tailored to their needs.

Cancer

By trying alternative treatments instead of getting effective medical help, cancer patients may allow the disease to progress beyond the treatable stage.

Alternative treatments often are attractive to people who are seriously ill. According to a survey on Americans' use of CAM, rates of CAM use are particularly high among patients with cancer.

Cancer is not a single disease, so no one device or remedy will diagnose, treat or prevent all types of cancer. Effective treatment depends on early diagnosis and treatment. By trying alternative treatments instead of getting effective medical help, cancer patients may allow the disease to progress beyond the treatable stage. However, a small number of alternative treatments are finding a place in cancer treatment - not as cures, but as a compliment to therapy in helping patients feel better and recover faster. One example is acupuncture which has been found to be effective in managing chemotherapy-associated nausea and vomiting and in controlling pain associated with surgery.

Autoimmune Disorders (HIV/AIDS)

Incurable, highly publicized autoimmune disorders have brought a boom in the sale of unproven products or treatments. People who are HIV-positive or who have AIDS spend millions of dollars abroad or illegally in this country to obtain unproven drugs and therapy. These drugs provide little, if any, benefit and are often toxic. People who are HIV positive or who have AIDS may delay and/or interfere with effective treatment by using alternatives. For example, garlic and St. John's Wort have been shown to adversely interfere with HIV medication.

Not all unapproved AIDS treatments are motivated by profit. An underground network of "guerilla clinics" provides unapproved drugs free to patients. However good their intentions may be, the drugs are still experimental and sometimes dangerous.

The fear generated by the disease has created a potentially unlimited market for products aimed at AIDS prevention. Unsubstantiated claims may create a false sense of security or may lead consumers to avoid precautions that are known to prevent the disease.

Weight Loss

The only way to lose weight effectively and safely is to increase activity while decreasing food intake.

Weight loss schemes and devices probably are the most popular form of quackery. Millions seek a painless, effortless way to shed unwanted pounds. Weight loss is a multibillion dollar industry that includes books, fad diets, drugs, special foods and clinics. Some products or treatments can produce weight loss, but the effect usually is temporary. The weight is quickly regained and may be even more difficult to lose when the next diet is attempted. Fad diets may not provide adequate calories or nutrients and can be harmful.

The only way to lose weight effectively and safely is to increase activity while decreasing food intake. Weight loss should be gradual, 1 to 2 pounds per week, to allow for the development and maintenance of new dietary habits. Prior

Questionable Diagnostic Methods

Kinesiology

This process involves placing a substance in the mouth or elsewhere on the body. A reaction to it is determined by measuring resistance in muscle groups. Kinesiology has been proven to be ineffective.

Cytotoxic Testing

Food extracts are mixed with a drop of the patient's blood to diagnose food allergies. Cytotoxic testing is not reproducible.

Hair Analysis

Hair testing can be used to determine the status of a few minerals. However, hair minerals are influenced by pollution, age, race and hair products. Hair analysis is ineffective in determining vitamin deficiencies. The technique is often misused to sell unnecessary dietary supplements.

Herbal crystallization analysis (HCA)

A drop of saliva and a drop of copper chloride are placed on a glass slide and left to dry. The spot is visually analyzed to see if any crystals form "curative patterns." Based on the patterns, consumers are prescribed an herb to get rid of their disease or illness. This method has never been proven.

Muscle Strength Testing

This method involves putting pressure on the patient's extended arm or leg. Any weakness indicates allergies or impaired function, and an appropriate nutritional supplement is prescribed to help the patient get better. This method is ineffective.

Live Cell Analysis

This diagnostic test claims to determine what nutrients you need. It involves having a drop of blood analyzed by an instrument called the Darkfield microscope to see if there are any unhealthy cells, cells with free radical damage, or cells that are not getting enough oxygen and nutrients. If unhealthy cells are present, you take an enzyme tablet (which costs over \$100) and magically all your cells are now normal. This test is both unreliable and unproven.

to beginning any weight loss program, see your doctor to be certain that you need to lose weight. Consult a registered dietitian to determine a safe and effective weight loss program. Some weight loss may be unnecessary. The key is to assess your health status and act accordingly.

Adolescence

Teenagers, too, are consumers of alternative treatments. Young shoppers may have money from part-time jobs or access to mom and dad's credit card. It is estimated that teens spend about \$101 per week on personal items.

Adolescence often brings feelings of insecurity about physical development. Teens may be drawn to experiment with products that promise to enhance appearance or speed their development. A number of products that may appeal particularly to teens include:

- **Breast developers.** Creams or lotions do not work and are a waste of money. Breast developing devices strengthen muscle but do not increase breast size.
- **Weight loss methods.** As many as 45 percent of teen girls report they are trying to lose weight. Fad diets are especially dangerous for teens because they have high nutritional needs to support their rapid growth and development.
- **Steroids and growth hormones.** These dangerous and illegal drugs often are used by teens and other athletes to give them a competitive edge.
- **Tanning Products.** Tanning beds, sun lamps or the sun itself promise to produce a healthy glow but instead cause aging of the skin. Exposure to ultraviolet radiation from any source is the leading cause of skin cancer.

Athletes

Athletes are highly susceptible to unsubstantiated claims for ergogenic aids as they attempt to gain a competitive edge. Ergogenics are substances or procedures that are reported to increase energy or otherwise enhance athletic performance. Athletes that already adhere to proper training, coaching and diet may look for an advantage by resorting to nutritional supplements. Nutritionally based ergogenic aids have increased in popularity with the ban of anabolic steroid use.

Other factors that have increased the popularity of ergogenic aids are:

1. Coaches, athletes and the public who have inadequate knowledge of sports nutrition. Athletes often take the advice of their coach, who may also be misinformed. Each athlete is different, and nutrition advice must be individualized.
2. Magazines constantly bombard us with nutrition information for athletes. Some of the more popular products include aspartic acid, bee pollen, brewer's yeast, choline, gelatin, ginseng, glycine, inosine, kelp, lecithin, protein supplements and wheat germ oil.

Some of the ways companies promote their product as worthwhile is by claiming it is university-tested, when in fact, no research has been done and by using unauthorized endorsements by professional organizations. Little scientific evidence exists to support any performance-enhancing ability of these products. Some may also be harmful. Costs range from approximately \$18 to \$140 for a one-month supply.

Dietary Supplements

Americans spend billions of dollars each year on dietary supplements. Yet, for most healthy adults, supplements are an unnecessary expense. The vast U.S. food supply provides an ideal source of nutrients. Eating a variety of food every day supplies adequate nutrients for most people.

Taking high doses of certain supplements can be harmful. In some cases, high-potency supplements contain several times the Dietary Reference Intake (DRI) for vitamins and minerals and can actually function more like a drug. Others, like vitamins A or D, can build up to toxic levels in the body.

DRIs are dietary standards for desirable and/or safe vitamin and mineral intake levels published by the Food and Nutrition Board of the National Academy of Sciences. DRIs include Recommended Dietary Allowances (RDAs) which are intended to meet the nutrient needs of healthy individuals and Adequate Intakes (AI) which are established when there is not enough scientific evidence to set an RDA and are based on diets known to be nutritionally adequate for U.S. and Canadian populations.

If you choose to take a vitamin or mineral supplement, it should be just that, a supplement, not a substitute. A one-a-day multivitamin and mineral supplement that meets 100 percent of the DRI for each vitamin and mineral is plenty adequate. Remember, pills do not provide a quick fix for a poor diet.

Other types of dietary supplements, such as herbals and botanicals are also widely available in the United States. Unlike vitamins and minerals, standardized recommendations or safe dosages have not been established for herbal, botanical and other nonnutrient supplements. Based on current laws, these supplements can be sold in the U.S. without prior approval or safety testing. Little scientific evidence exists to support the use of most herbal, botanical and other nonnutrient supplements. Some have even been found to be harmful. Check out the National Center for Complementary and Alternative Medicine for reliable, science-based information (<http://nccam.nih.gov/>).

How Can You Protect Yourself?

Learn to protect yourself from questionable health products and services by being an informed consumer. Online service can be a reliable source for articles from consumer health publications and professional medical journals. But beware! Special bulletins or forums are not necessarily sources of accurate nutritional or medical advice. Question information that you see or read in advertisements. Question anyone selling products door to door or through the mail. Don't allow yourself to be rushed into buying. The following tips can help you evaluate questionable advertising and sales techniques:

- Does the seller promise immediate, effortless or guaranteed results?
- Does the advertisement contain words like “break-through,” “miracle,” “special” or “secret”? These are used to appeal to your emotions and are not scientific or medical words.
- Is the product or service a “secret remedy” or a recent discovery that can not be found anywhere else?
- Is the product recommended for stress, or being promoted as “natural,” claiming it will help “detoxify,” “revitalize” and “purify” your body?
- Does the manufacturer claim that the product is effective for a wide variety of ailments? The broader the claims, the less likely they are to be true.
- Do the promoters offer testimonials or case histories of patients who have been “cured”?
- Are vitamin and mineral dose recommendations greater than the DRIs? Reliable sources will make only recommendations that are in line with the DRIs.
- Is the product being sold by a self-proclaimed “health advisor”? Insist on identification and professional credentials that are nationally accredited and recognized, such as a registered dietitian (RD) or a Master's degree in nutrition.

- Does the sponsor claim to have a cure for a disease (like arthritis or cancer) which is not yet understood by medical sources?
- Do the promoters use guilt or fear to sell the product?
- Does the advertisement claim Food and Drug Administration (FDA) approval? It is illegal to suggest FDA approval as a part of any marketing claim. However, all medical products sold across state lines must be registered with the FDA. Ask for the FDA proof of product listing if in doubt.
- Remember, if it sounds too good to be true, it probably is!

References

The following fact sheets are available from Colorado State University Extension:

9.362, *Nutrition for the Athlete*.

9.363, *Weight Loss Programs and Products*.

9.364, *Weight Loss Diet Books*.

9.368, *Weight Management: It's All About You*.

9.338, *Food vs. Pills*.

Munger, Richard L. *Changing Children's Behavior by Changing the People, Places, and Activities in Their Lives: By Changing the People, Places, and Activities in Their Lives*. Published by Boys Town Press, 2005. <http://books.google.com/books?id=llq6uUlwqC&printsec=frontcover#PPA139,M1> accessed December 3, 2008

National Center for Complementary and Alternative Medicine. *Get the Facts: Cancer and CAM*. <http://nccam.nih.gov/health/camcancer/> accessed December 3, 2008.

National Center for Complementary and Alternative Medicine. *HIV (Human Immunodeficiency Virus)*. <http://nccam.nih.gov/health/hiv/hiv.htm> accessed December 3, 2008.

National Center for Complementary and Alternative Medicine. *Rheumatoid Arthritis and Complementary and Alternative Medicine*. <http://nccam.nih.gov/health/RA/#top> accessed December 3, 2008.

National Institute on Aging. *Health Quackery: Spotting Health Scams*. <http://www.nia.nih.gov/HealthInformation/Publications/quackery.htm> accessed December 3, 2008.

Nutrition Business Journal. *NBJ's Complementary and Alternative Medicine and Practitioner Supplement Sales Report 2007*. http://nutritionbusinessjournal.com/alternative-medicine/market-research/nbjs_complementary_alternative_medicine_practitioner_supplement_sales_2007/ accessed December 3, 2008

Youth Risk Behavior Survey (YRBS). *Trends in the Prevalence of Obesity, Dietary Behaviors, and Weight Control Practices National YRBS: 1991—2007*. http://www.cdc.gov/HealthyYouth/yrbs/pdf/yrbs07_us_obesity_diet_wt_control_trend.pdf accessed December 3, 2008.

¹J. Anderson, Colorado State University Extension foods and nutrition specialist and professor, L. Young, M.S., former graduate student; and J. Roach, M.S. graduate student.

Colorado State University, U.S. Department of Agriculture, and Colorado counties cooperating. CSU Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.