Choosing Wisely®

An initiative of the ABIM Foundation

The American College of Medical Toxicology and
The American Academy of Clinical Toxicology

Ten Things Physicians and Patients Should Question

1 Don't use homeopathic medications, non-vitamin dietary supplements or herbal supplements as treatments for disease or preventive health measures.

Alternative therapies are often assumed safe and effective just because they are "natural." There is a lack of stringent quality control of the ingredients present in many herbal and dietary supplements. Reliable evidence that these products are effective is often lacking, but substantial evidence exists that they may produce harm. Indirect health risks also occur when these products delay or replace more effective forms of treatment or when they compromise the efficacy of conventional medicines.

2 Don't administer a chelating agent prior to testing urine for metals, a practice referred to as "provoked" urine testing.

Metals are ubiquitous in the environment and all individuals are exposed to and store some quantity of metals in the body. These do not necessarily result in illness. Scientific studies demonstrate that administration of a chelating agent leads to increased excretion of various metals into the urine, even in healthy individuals without metal-related disease. These "provoked" or "challenge" tests of urine are not reliable means to diagnose metal poisoning and have been associated with harm.

3 Don't order heavy metal screening tests to assess non-specific symptoms in the absence of excessive exposure to metals.

Individuals are constantly exposed to metals in the environment and often have detectable levels without being poisoned. Indiscriminant testing leads to needless concern when a test returns outside of a "normal" range. Diagnosis of any metal poisoning requires an appropriate exposure history and clinical findings consistent with poisoning by that metal. A patient should only undergo specific metal testing if there is concern for a specific poisoning based on history and physical examination findings.

4 Don't recommend chelation except for documented metal intoxication which has been diagnosed using validated tests in appropriate biological samples.

Chelation does not improve objective outcomes in autism, cardiovascular disease or neurodegenerative conditions like Alzheimer's disease. Edetate disodium is not FDA-approved for any condition. Even when used for appropriately diagnosed metal intoxication, chelating drugs may have significant side effects, including dehydration, hypocalcemia, kidney injury, liver enzyme elevations, hypotension, allergic reactions and essential mineral deficiencies. Inappropriate chelation, which may cost hundreds to thousands of dollars, risks these harms, as well as neurodevelopmental toxicity, teratogenicity and death.

5 Don't remove mercury-containing dental amalgams.

Mercury-containing dental amalgams release small amounts of mercury. Randomized clinical trials demonstrate that the mercury present in amalgams does not produce illness. Removal of such amalgams is unnecessary, expensive and subjects the individual to absorption of greater doses of mercury than if left in place.

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6 Don't use phenytoin or fosphenytoin to treat seizures caused by drug toxicity or drug withdrawal.

With rare exceptions, phenytoin is ineffective for convulsions caused by drug or medication toxicity. Phenytoin has been demonstrated to be ineffective for the treatment of isoniazid-induced seizures and withdrawal seizures and may potentially be harmful when used to treat seizures induced by theophylline or cyclic antidepressants. First-line treatment of toxin-induced seizures and withdrawal seizures is benzodiazepines, followed by additional medications that act through agonism at the GABA A receptor, such as barbiturates.

7 Don't recommend "detoxification" through colon cleansing or promoting sweating for disease treatment or prevention.

No objective scientific evidence supports a role for colonic irrigation for "detoxification." No US FDA-approved colonic hydrotherapy systems exist for nonmedical purposes like colon cleansing. Colonic cleansing through hydrotherapy, laxatives or cathartics may result in cramping, pain, dehydration, electrolyte imbalances, infections and bowel perforation. Promoting sweating doesn't produce clinically relevant toxin elimination. Methods to promote sweating may cause heat stroke, dehydration, burns, myocardial injury, carbon monoxide poisoning and liver or kidney damage, which might compromise toxin elimination.

8 Don't order tests to evaluate for or diagnose "idiopathic environmental intolerances," "electromagnetic hypersensitivity" or "mold toxicosis."

These diagnoses reflect labels to indicate that patients have adverse non-allergic reactions to normal environmental stimuli. These diagnoses are made on the bases of self-reported symptoms or non-validated testing procedures. Although these conditions have been widely promoted, evidence-based assessments fail to support these diagnoses as disease entities. Labeling a patient with these diagnoses may adversely affect the patient's lifestyle, obscure ascertainment of the etiology of their symptoms and promote unnecessary testing.

9 Don't perform hair or nail testing for "metal poisoning" screening in patients with nonspecific symptoms.

The proper clinical assessment for potential exposure to metals must consider the precise exposure, symptoms, signs, route of exposure and dose. Hair and nail testing are rarely required, frequently unreliable and provide limited utility after metal exposures. A patient should undergo tailored testing for a specific metal exposure based on an appropriate evaluation. Non-specific hair and nail testing for multiple metals subjects patients to potentially harmful diagnostic mislabeling and subsequent detrimental therapy.

10 Don't perform fasciotomy in patients with snake envenomation absent direct measurement of elevated intracompartmental pressures.

Crotalinae snakebites produce findings mimicking compartment syndrome that are rarely indicative of actual compartment syndrome. Myonecrosis results from venom toxicity rather than elevated compartment pressures. Fasciotomy does not prevent, and may worsen, necrosis. In some cases with elevated compartment pressures, treatment with antivenom and without fasciotomy was successful. No available evidence indicates when fasciotomy should be performed in the management of snakebites. If considered, fasciotomy should not be performed without first documenting elevated compartment pressure.

How This List Was Created

The American College of Medical Toxicology's (ACMT's) Board of Directors established a *Choosing Wisely®* work group in 2013 to develop a list of items for the *Choosing Wisely®* campaign. Members of the work group were chosen to represent various practice settings within the field of medical toxicology, including ambulatory, acute and population-based practice. Work group members included the President of the College, the Chair of the Practice Committee, the Chair of the Positions and Guidelines committee and other academic leaders within the medical toxicology community. All work group members also represented the American Academy of Clinical Toxicology (AACT). The first list was released by the work group in 2013 and in 2014, the work group reconvened to develop a second list of items for the campaign. A second preliminary list was disseminated to all members of ACMT and AACT for review, commentary and potential additions. Additional feedback was solicited from leaders within the field of medical toxicology. The work group reviewed all responses, and narrowed the list to the final five items based on a review of scientific evidence, relevance to the specialty and greatest opportunity to improve care, reduce cost and reduce harm to patients.
The final list was approved by the ACMT Board of Directors and the AACT Board of Trustees.

The ACMT and AACT disclosure and conflict of interest policies can be found at www.acmt.net and www.clintox.org respectively.

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About the ABIM Foundation

The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

To learn more about the ABIM Foundation, visit www.abimfoundation.org.

About the American College of Medical Toxicology and the American Academy of Clinical Toxicology

The American College of Medical Toxicology (ACMT) is an association of physicians with recognized expertise in the diagnosis, management and prevention of human poisoning and other adverse health effects due to medications, occupational and environmental toxins and biological agents. ACMT's mission is to advance quality care of poisoned patients and public health through physicians who specialize in consultative, emergency, environmental, forensic and occupational toxicology. ACMT values the importance of research and evidence based practice in combating human poisoning.

The American Academy of Clinical Toxicology (AACT) is a multidisciplinary organization uniting scientists and clinicians in the advancement of research, education, prevention and treatment of diseases caused by chemicals, drugs and toxins. AACT's mission is to promote the study of health effects of poisons, encourage the development of new therapies and treatment in clinical toxicology, and define the position of clinical toxicologists on toxicology-related issues.

For more information, visit www.acmt.net and www.clintox.org.

For more information or to see other lists of Things Providers and Patients Should Question, visit www.choosingwisely.org.