

Recommendations from the American Society for Clinical Pathology

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The American Board of Internal Medicine (ABIM) Foundation this summer completed its Choosing Wisely initiative, launched in 2012 as a campaign “to spark conversations between clinicians and patients about what tests, treatments, and procedures are needed – and which ones are not.” Since then, more than 80 specialty societies shared 700-plus recommendations of tests and treatments they said were overused or unnecessary; this journal published 42 articles sharing many of those recommendations.

Although ABIM no longer maintains and makes the recommendations available via their website, I will work with *JLGH* to continue to offer information to help readers in their daily practice of medicine. We will review past recommendations and offer new ones where available.

This issue marks my 43rd article on Choosing Wisely, with “Five or More Things That Physicians and Patients Should Question” from the American Society for Clinical Pathology. The Society has offered 35 recommendations over the years; the five below are new to this publication. Additional information on these items is available online at [ascp.org/content/get-involved/choosing-wisely/choosing-wisely-ascp#](https://www.ascp.org/content/get-involved/choosing-wisely/choosing-wisely-ascp#).

RECOMMENDATIONS FROM THE AMERICAN SOCIETY FOR CLINICAL PATHOLOGY

1. Do not generally use swabs to collect specimens for microbiology cultures from the operating room. For optimal recovery of microbes, tissue or fluid samples obtained in the operating room should be submitted, when available. Swab specimens are not optimal for microbiology testing because, in this setting, alternative specimen types have greater specificity and are more likely to reflect the pathologic process being investigated. There is evidence that, in this setting, swabs do not offer benefit, and testing increases costs and does not provide higher quality care. Eliminating swabs when possible and only submitting tissue or fluid addresses these issues and results in a more effective use of laboratory resources and personnel.

2. Avoid thyroid stimulating hormone (TSH) screening in annual well-visits for asymptomatic adults, regardless of age. Testing is appropriate when patients are considered at risk or demonstrate subtle or direct signs of thyroid dysfunction upon physical evaluation. There is no evidence that finds routine TSH screening improves patient care.¹

3. Do not perform urine cytology for routine hematuria investigation. This is costly and of limited clinical value as a first-line investigation for all patients with hematuria. A negative test does not rule out malignancy because this test has low sensitivity for diagnosing low-grade superficial urothelial malignancy. It is also impossible to localize a tumor based on urine cytology alone. Hematuria may require further invasive investigation, including upper urinary tract imaging and flexible cystoscopy.²

4. Do not order a Type & Crossmatch for patients undergoing procedures that have minimal anticipated blood loss, historically low fraction of transfusion use, and a low transfusion index (ratio of transfused units to patients). Appropriate use of blood component resources is critical to maintain adequate supply. The Type & Crossmatch is labor and reagent intensive, resulting in increased workload costs and increased inventory wastage. Each hospital’s medical staff should have a maximal surgical blood ordering schedule, and it should be available to all members of the medical and hospital staff, upon request.³

5. Antiplatelet agent inhibition of platelet activity using platelet function or genetic testing should not be monitored. Evidence does not support the use of these laboratory tests to guide the dose of aspirin or clopidogrel in patients with so-called aspirin or clopidogrel “resistance.” Study results do not provide support for the concept of changing antiplatelet therapy based on the results of platelet function monitoring tests. Thus, high on-treatment platelet reactivity (higher than expected platelet reactivity seen in patients receiving antiplatelet therapy) may be a non-modifiable clinical risk factor in patients treated with antiplatelet agents.⁴

Top Tips from Family Practice

GERMAN RESEARCHERS LINK AGE TO HIGHER AEROSOLIZED RESPIRATORY EMISSIONS

In a paper published in the *Proceedings of the National Academy of Sciences*⁵ and reported by Medical Xpress,⁶ researchers at the Universität der Bundeswehr München found unexpectedly high aerosolized respiratory emissions from people over 60 years old. The researchers detailed their findings after testing an improved method of measuring these emissions on 80 individuals.

Airborne respiratory diseases are transmitted by virus in respiratory particles. When a person breathes out, a high-speed stream of air rushes over the surface of the wet lining of the respiratory tract, and some of this moisture is aerosolized and carried out with the exhalation. Particles within the lining adhere to the exiting moisture that contains a mix of salts, proteins, mucus, and potential pathogens of bacteria and viruses.

Typically, the emission of aerosol particles can increase by more than a hundredfold from rest to peak exercise, and with the increase, the risk of infection can rise more than tenfold. The researchers found that subjects ages 60 to 76 years old emitted more than twice as many aerosol particles at rest and during exercise, and five times as much aerosol volume. This suggests that aerosol particle emission increases when the respiratory system ages.

At rest, the expired air of the older subjects contained an average respiratory aerosol particle concentration of 310 particles/L compared to 105 particles/L in younger subjects. The study found differences between elderly men and women, with elderly men emitting 210 particles/L compared to elderly women at 500 particles/L. While the elderly women had more than twice the particle load per liter of air, the elderly men ventilated 57% more volume than the elderly women, making the overall difference insignificant.

The age-related difference, however, was more significant during exercise, as the young group averaged 620 particles/L while the elderly group reached an average of 2,090 particles/L.

While age significantly affected aerosol particle emission, gender and body mass index differences were not significant. The study highlights that one size may not fit all when planning mitigation measures, especially for indoor fitness facilities or elder care facilities during heightened infection waves or future pandemics.

AMERICAN HEART ASSOCIATION AND AMERICAN COLLEGE OF CARDIOLOGY ISSUE UPDATED CHRONIC CORONARY DISEASE GUIDELINE⁷

The latest clinical practice guideline for managing patients with chronic coronary disease (CCD) takes an evidence-based and patient-centered approach to care and includes key updates.

Developed by the American Heart Association (AHA), the American College of Cardiology (ACC), and other specialty societies, the 2023 guideline both updates and consolidates AHA/ACC guidelines previously published in 2012 and 2014 for the management of patients with stable ischemic heart disease. Among the key recommendations:

- Long-term beta-blocker therapy is no longer recommended for improving outcomes for patients with CCD in the absence of myocardial infarction (MI) within the past year, left ventricular ejection fraction (LVEF) $\leq 50\%$, or another primary indication for beta-blocker therapy. Either a calcium channel blocker or a beta-blocker is recommended as first-line antianginal therapy.
- Sodium glucose cotransporter 2 (SGLT2) inhibitors and glucagon-like peptide-1 (GLP-1) receptor agonists are recommended for selected groups of patients with CCD, including individuals without diabetes, to improve outcomes.
- Statins remain first-line therapy for lipid lowering for patients with CCD. Several adjunctive therapies, such as ezetimibe, proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors, inclisiran, or bempedoic acid, may be used in select populations, although clinical outcomes data are not yet available for novel agents such as inclisiran and bempedoic acid.
- Shorter durations of dual antiplatelet therapy are safe and effective in many circumstances, particularly when the risk of bleeding is high and the ischemic risk is not high.
- The use of non-prescription or dietary supplements, including fish oil and omega-3 fatty acids or vitamins, is not recommended for patients with CCD, given the lack of benefit of reducing cardiovascular events.
- Revascularization is recommended in two scenarios: 1) for patients with lifestyle-limiting angina despite guideline-directed medical therapy and with coronary stenosis amenable to revascularization, with the goal of improving symptoms; and 2) for patients with significant left main disease or multivessel disease with severe LV dysfunction (LVEF

≤35%). With the goal of improving survival, coronary artery bypass grafting plus medical therapy is recommended over medical therapy alone for these high-grade lesions.

- Routine periodic anatomic or ischemic testing in the absence of a change in clinical or functional status is not recommended for risk stratification or to guide therapeutic decision-making for patients with CCD.
- Non-drug therapies, including healthy dietary habits and exercise, are recommended for all patients with CCD. When possible, patients should participate in regular physical activity, including activities to reduce sitting time and to increase aerobic and resistance exercise.
- Cardiac rehabilitation for eligible patients provides significant cardiovascular benefits, including decreased morbidity and mortality.
- Electronic cigarettes increase the odds of successful smoking cessation, but they are not recommended as first-line therapy, owing to lack of long-term safety data and risks associated with sustained use.

DIETARY SUPPLEMENTS FOR IMMUNE FUNCTION AND INFECTIOUS DISEASES

According to the National Institutes of Health (NIH), interest in dietary supplement ingredients that might enhance immune function and reduce the risk of infectious diseases is high, especially after the emergence of COVID-19.⁸

NIH notes that consuming adequate amounts of certain vitamins and minerals is important for proper immune function, and clinical deficiencies of these nutrients weaken immunity and can increase susceptibility to infections. Other ingredients such as botanicals and probiotics, whether provided through foods or dietary supplements, are not essential but might affect immune function.

The information that follows from NIH summarizes the effects of various dietary supplement ingredients on immune function and the risk of selected infectious diseases. Dietary supplement ingredients in each category are presented in alphabetical order. Some cases involve intravenous, enteral, or parenteral administra-

tion. Dietary ingredients administered by these routes are not classified as dietary supplements, but the information is included for completeness.

For detailed information on dietary supplements and COVID-19, refer to the NIH “Dietary Supplements in the Time of COVID-19” fact sheet.⁹

Vitamins and Minerals

Consuming a nutritious variety of foods helps maintain overall good health and a strong immune system. Obtaining adequate amounts of vitamins and minerals is also important for good health, and deficiencies of certain vitamins and minerals – including vitamins A, B₆, B₁₂, C, D, E, and K; folate; and copper, iodine, iron, magnesium, selenium, and zinc – might adversely affect immune function. Examples involving vitamins include:

- Folate deficiency affects thymus and spleen function and decreases T-lymphocyte levels, and vitamin B₁₂ deficiency decreases the phagocytic capacity of neutrophils.
- Vitamin A deficiency is associated with increased susceptibility to infections, altered immune responses, and impaired ability of epithelial tissue to act as a barrier to pathogens.
- Vitamin E deficiency impairs humoral and cell-mediated immunity and is associated with reduced natural killer cell activity.

Examples involving minerals include:

- Copper deficiency is associated with altered immune responses and an increased risk of infection, especially in infants and older adults.
- Low magnesium status is associated with decreased immune cell activity, increased oxidative stress,

Museum Shares Historical Publications Online

As part of its mission to preserve the “rich medical heritage” of Lancaster County, the Lancaster Medical Heritage Museum shares its collection of historical medical publications online. Works offered include case studies and procedural overviews from local, national, and international journals, along with local advertisements, pamphlets, and more. Articles span a 55-year period, from 1946 through 2000, and are available at LancasterMedicalHeritageMuseum.org under the “Publications” pull-down menu. JLGH also hopes to reprint some of these in future issues.

“Though we have a varied and interesting compilation of articles available,” says Alan Peterson, MD, a member of the JLGH Advisory Editorial Board who also serves on the Lancaster Medical Heritage Museum’s Board of Directors, “we need your help. We do not believe our collection to be complete. If you are aware of other articles written in these years by LG Health staff, we’d love to hear from you.” Email suggestions to museumlmh@gmail.com. The museum and its collection of over 11,000 medical artifacts is located at 410 N. Lime Street, Lancaster. Winter hours are Monday/Wednesday/Friday, 10:00 a.m. to 3:00 p.m. Admission is free to LG Health employees with a badge and children under 3, and \$8.00 for all others.

and increased inflammation, including increased levels of some inflammatory cytokines, such as interleukin-6.

- Selenium deficiency might adversely affect immune response, as well as the pathogenicity of viruses.

The European Society for Clinical Nutrition and Metabolism states that low intakes or status of several micronutrients – including vitamins A, E, B₆, and B₁₂, as well as selenium and zinc – are associated with worse outcomes in patients with viral infections.

If needed, vitamin and mineral supplementation can boost intakes to recommended levels, but in the absence of deficiency, routine supplementation with micronutrients probably does little to prevent or treat specific infections.

NIH subsections describe research on the effects of dietary supplements containing more commonly studied vitamins and minerals – including vitamins A, C, D, and E, as well as selenium and zinc – on immune function.

FIVE STEPS TO HELP ADDRESS CLIMATE CHANGE

In a recent editorial in *Medpage Today*,¹⁰ physician leaders at Northwest Permanente put out a call to physicians, clinicians, and health care delivery systems to help mitigate climate change. Statistics in the article highlight health care's contribution to the problem, including:

- American health care contributes 8.5% of all greenhouse gas emissions in the United States.
- Hospitals generate an enormous amount of non-recyclable trash from single-use items that end up in landfills or incinerators.
- The gases emitted by one hour of anesthetic use are equivalent to driving a gasoline-powered car 250 miles, and some anesthetic gases, including nitrous oxide, can survive in the atmosphere for more than 100 years.

The article's authors, Leong Koh, MD, and Colin Cave, MD, write:

Physicians are increasingly on the front lines of the crisis as ozone, smog, and particulate pollution from wildfires inflame lungs, exacerbate asthma symptoms, and worsen many health problems, such as diabetes, heart disease, cancer, and lung disease.

As ... trusted advisors, we have a responsibility to reduce the climate impacts of the health care sector, including those of us who provide care ... During visits with patients, clinicians can signal that it is acceptable to talk about climate change, so patients feel comfortable bringing up climate-related concerns.

To address these concerns, the authors suggest we:

1. Advocate for policies that increase the primary care workforce and improve their well-being.
2. Move more care into the home through innovations like telehealth and remote patient monitoring.
3. Rethink supply-chain redundancy.
4. Make prudent use of medical supplies.
5. Ensure vulnerable communities are represented when planning policies.

Polls and studies have found that an individual's own physician is the most trusted advisor when it comes to health-related information and decisions. With that in mind, Drs. Koh and Cave conclude: "Let's use that influence for positive change."

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