



Medication Management and Nutrition

Complex but Critical

NUTRITION CONNECTION

Nutrition care in older adults includes optimizing drug therapy



Optimizing drug therapy is an essential part of nutritional care for older adults. Regardless of the presence of any disease states that could be risk factors, adults over age 65 are more vulnerable to drug-induced nutritional deficiencies. In addition, drugs may trigger side effects such as nausea, anorexia, taste alterations, etc. that impact overall food and beverage intake.

The process involved in prescribing a medication is very complex and includes deciding when a drug is indicated, choosing the best drug, determining the dose and schedule, monitoring for effectiveness and toxicity, and educating the individual about potential side effects.

One of the most widely used “best practice” resources utilized by physicians and healthcare providers who treat older adults is the American Geriatrics Society (AGS) Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. The AGS Beers Criteria® resource provides information on the appropriate and safe use of pharmaceutical agents in complex older patients.

This article provides a general overview of the AGS Beers Criteria® along with some key considerations we must keep in mind to preserve optimal nutritional status while minimizing food-drug interactions.



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MEDICATION USE BY OLDER ADULTS

It is a fact that older adults are more likely to be taking multiple drugs, both prescription and over-the-counter medicines, than younger people. In 2013–2014, the number of adults aged 18–44 taking a prescription drug in the past month was 36.5 percent, compared to 69.6 percent of adults aged 45–64, and 90.8 percent of adults aged 65 and over. This is an increase from the levels in 1988–1994. In addition, the number of adults reporting the use of five or more prescription drugs rose by 2.7 percent for those aged 18–44, 12.8 percent for those aged 45–64, and 28.4 percent for individuals 65 and over.

Prescription drug use over the past 40 years has been impacted by many factors, including medical need, prescription drug development, increased direct-to-consumer advertising, and expanded health insurance and prescription drug coverage. Even though Americans are now living longer, a greater percentage of older Americans live with several chronic conditions that may require multiple medications. As prescription drug use increases, however, so do concerns

about polypharmacy. Polypharmacy—which is commonly defined as taking five or more drugs simultaneously—increases the risk of drug interactions, adverse drug events, nonadherence, and reduced functional capacity. While polypharmacy most commonly refers to prescribed medications, it is important to also consider the number of over-the-counter and herbal/dietary supplements used.

FOOD-DRUG INTERACTIONS

The term *food-drug interaction* is used in a broad sense to include not only the drug-nutrient interaction, but also the effects of a medication on overall nutritional status, such as appetite or the ability to eat. In addition, there may be vitamins, minerals, and other food supplements taken with medications that also increase the risk of nutrient-induced alterations. Other factors include effects on pH of the GI tract, transit time, etc.

Herbal medicines must also be considered as they may interact with prescribed drug therapies and lead to adverse events. It is important to routinely question individuals about the use of unconventional

therapies. Examples of herbal-drug therapy interactions are ginkgo biloba extract taken with warfarin, causing an increased risk of bleeding, and St. John's wort taken with serotonin-reuptake inhibitors, increasing the risk of serotonin syndrome in older adults.

There are also certain foods or food additives which have similar effects of medication that may actually enhance a medication's potency or create a toxic effect with the medication. Some of the most common include:

- Alcohol, which is distributed throughout the body and is able to cross all membrane barriers, increasing the likelihood of interacting with a drug's action.
- Caffeine, which can have many different effects on the central nervous system, cardiovascular system, and metabolism. Symptoms vary in range, dependent on how much is consumed—from small differences in alertness, to seizures and cardiovascular instability.

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- Grapefruit juice, which is known to interact with certain drugs such as calcium channel blockers, immunosuppressants, and antihistamines. More than 85 prescription medications have demonstrated interactions with grapefruit. Serious adverse effects have included sudden death, kidney failure, GI bleeding, and rhabdomyolysis (a condition that can occur when muscle tissue is injured and releases damaging protein into the blood).
- Vitamin K in foods, nutrients, and natural products, which can increase bleeding and decrease anticoagulant action.

AMERICAN GERIATRICS SOCIETY (AGS) BEERS CRITERIA®

While there are many resources for monitoring the use of medications, the Beers Criteria® is one of the most frequently-cited reference tools in geriatrics. This criteria was initially developed by an expert consensus panel in 1991 to target nursing home residents. The panel produced a list of medications considered inappropriate for older

patients, either because of ineffectiveness or high risk for adverse events.

The original Beers Criteria® was revised in 1997, 2003, 2012, and most recently in 2015. A proposed 2018 Beers Criteria® was released August 13, 2018 for a public comment period through September 4, 2018, with a final version of the AGS 2018 Updated Beers Criteria® slated for release this fall. The current 2015 criteria and other resources are available through the American Geriatrics Society at <https://www.americangeriatrics.org/>.

The 2015 criteria includes more than 50 medications designated in one of three categories: those that should always be avoided (e.g., barbiturates, chlorpropamide); those that are potentially inappropriate in older adults with particular health conditions or syndromes; and those that should be used with caution.

Some of the inappropriate drug therapies identified on the Beers list also include over-the-counter products. This reinforces the need to always consider over-the-counter drug therapies when reviewing a patient's medications, and to educate individuals on potential problems that can arise

from using these products.

The Beers Criteria® is increasingly being used to monitor quality of care for older adults. The validity of these consensus-derived criteria in predicting adverse outcomes therefore is becoming increasingly more important. Studies of earlier versions of the Beers Criteria® found that while the criteria did predict adverse outcomes, some medications that were not on the earlier criteria correlated more closely with adverse outcomes.

For their proposed 2018 update, the interprofessional panel of geriatrics experts responsible for the AGS Beers Criteria® identified more than 40 potentially problematic medications or classes of medications presently organized across five lists:

- Two draft lists detail potentially inappropriate medications for most older adults or for those with specific health conditions.
- One draft list describes certain medications that should be used only with considerable caution.
- One draft list details specific medication combinations that may lead to harmful “drug-drug” interactions.

THE BEERS CRITERIA®

is increasingly being used to monitor quality of care for older adults.

- A final draft list describes certain medications that should be avoided or dosed differently for older people with poor kidney function.

In addition to the Beers Criteria,[®] there are also some other tools used with the elderly population to include:

- Screening Tool of Older People's Prescriptions (STOPP) criteria
- The FORTA (Fit FOR The Aged) List identifies medications rated in four categories (clear benefit; proven but limited efficacy or some safety concerns; questionable efficacy or safety profile, consider alternative; clearly avoid and find alternative) with ratings based on the individual patient's indication for the medication.
- The Centers for Medicare & Medicaid Services (CMS) drug utilization review criteria targets eight prescription drug classes (digoxin, calcium channel blockers, angiotensin-converting enzyme (ACE) inhibitors, H2 receptor antagonists, NSAIDs, benzodiazepines, antipsychotics, and antidepressants) and focuses on four types of prescribing problems (inappropriate dose, inappropriate duration of therapy, duplication of therapies, and potential for drug-drug interactions).


SUMMARY AND RECOMMENDATIONS

Optimum nutrition care for the aging clearly needs to include management of medication use for any nutritional implications. Some recommendations to assist in effective management include:

- An assessment of all medications an individual is taking.
 - > The comprehensive nutrition assessment should include a review of drugs that may:
 - alter the movement of a drug through the body: absorption, distribution, metabolism, or excretion
 - deplete vitamins/minerals,
 - modify medication actions
 - result in biochemical abnormalities as evidenced in lab results
 - > The use of herbal and dietary supplements by older patients must be considered and providers need to remember that they may not volunteer this information, leading to increased risk of drug-drug interactions related to these supplements.
- Using criteria sets such as the Beers Criteria[®] to identify medications that should not be prescribed, or should be prescribed with caution, in older adults.
- Using a stepwise approach to review current drug therapy; recommending discontinuing unnecessary medications, considering nonpharmacological alternative strategies; considering safer alternative medications; using the lowest possible effective dose; including all necessary beneficial medications.

Understanding medication use in the aging population is complex, but it's critical in managing overall nutrition. Utilize "best practice" resources related to medication management and nutrition for optimal results. **E**

This article is for informational purposes only. Always follow the order from a client's doctor and the facility's RDN.




NEW
ITEM

Beef Meatloaf

- ONLY 150mg of sodium per serving.
- Ships raw and pre-mixed, ready to bake.
- Provides basic recipe consistency.


***2/5 pound loaves**

***Fits perfectly in a half pan**



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REFERENCES

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- MedlinePlus. <https://www.nlm.nih.gov/medlineplus/druginformation.html>
- National Library of Medicine, Drug Information Portal (medication class information). <http://druginfo.nlm.nih.gov/drugportal/drug/categories>
- The Food and Drug Administration webpage, Medwatch: The FDA Safety Information and Adverse Event Reporting Program. <http://www.fda.gov/Safety/MedWatch/default.htm>
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- Niedert, K. *Nutrition Care of the Older Adult, Third Edition*, Academy of Nutrition and Dietetics, Chicago, Illinois, 2016.
- Avoid Food-Drug Interactions: A Guide from the National Consumers League and U.S. Food and Drug Administration; U.S. Department of Health and Human Services Food and Drug Administration Publication no. (FDA) CDER 10-1933 www.nclnet.org or www.fda.gov/drugs
- Resources <http://www.fda.gov/usemedicinesafely> Consumer education on how to choose and use medicine, from the FDA. <http://www.medlineplus.gov> Health information for consumers, from the government's National Library of Medicine (NLM).
- WebMD: Drugs/Medication, Vitamins and Dietary Supplement Tool. <https://www.webmd.com/drugs/2/index> and <https://www.webmd.com/vitamins/index>
- Prescription Drugs; U.S. Department of Health and Human Services. <https://healthfinder.gov/FindServices/SearchContext.aspx?topic=942>
- National Center for Complementary and Integrative Health. www.nccih.nih.gov
- Natural Medicines resource available on dietary supplements, natural medicines, and complementary, alternative, and integrative therapies. <https://naturalmedicines.therapeuticresearch.com>

CE Questions | NUTRITION CONNECTION



This Level II article assumes that the reader has a foundation of basic concepts of the topic. The desired outcome is to enhance knowledge and facilitate application of knowledge to practice.

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Reading *Medication Management and Nutrition: Complex but Critical* and successfully completing these questions online has been approved for 1 hour of continuing education for CDM, CFPPs. CE credit is available ONLINE ONLY. To earn 1 CE hour, access the online CE quiz in the ANFP Marketplace. Visit www.ANFPonline.org/market, select "**Publication**," then select "**CE article**" at left, then search the title "*Medication Management and Nutrition: Complex but Critical*," purchase the article, and complete the CE quiz.

- In 2013-2014, _____ of adults 65 and older had taken a prescription drug in the past month.
 - 75.8 percent
 - 84.8 percent
 - 90.8 percent
- Polypharmacy is a term which commonly means taking _____ or more drugs.
 - 4
 - 5
 - 8
- Food-drug interaction used in a broad sense includes not only the drug-nutrient interaction, but the
 - Effects of a medication on overall nutritional status
 - Financial reimbursement for medications
 - Process for how medications are packaged in med carts
- Herbal medicines and the use of _____ therapies may also interact with prescribed drug therapies and lead to adverse events.
 - Unconventional
 - Less expensive
 - Physical
- One of the most frequently-cited reference tools in geriatrics for monitoring the use of medications is the American Geriatrics Society's
 - White Paper on Medication Use
 - Encyclopedia of Food-Drug Interactions
 - Beers Criteria®
- The Beers Criteria® includes more than 50 medications designated in three categories to include:
 - Those to always avoid; those potentially inappropriate in older adults; and those that should be used with caution
 - Those to always avoid, those to select based on reimbursement categories; and those that should be used with caution
 - Prescription drugs; over-the-counter medicines; and herbal supplements
- Screening and assessment of nutritional status and care should include a review of drugs that:
 - Are taken with food only and those that deplete vitamins/minerals
 - Alter the movement of a drug through the body, deplete vitamins/minerals, modify medication actions, or result in biochemical abnormalities as evidenced in lab results
 - Are prescribed in bulk doses, taken without food, and deplete vitamins/minerals