

OSF MedAdvantage - High-Risk Medications for Aging Adults

Drug Class	Anticholinergics - First-Generation Antihistamines	Anti-infective	Cardiovascular	Tricyclic Antidepressants	Nonbenzodiazepine Hypnotics	Estrogen	Sulfonylureas, Long-Duration	Non-COX-selective NSAIDs	Skeletal Muscle Relaxants
High-Risk Medications to Avoid	<ul style="list-style-type: none"> Hydroxyzine Promethazine Diphenhydramine 	Nitrofurantoin (for chronic use or in patients with CrCl < 30)	Digoxin (> 0.125 mg/day)	<ul style="list-style-type: none"> Amitriptyline Clomipramine Doxepin (> 6 mg/day) Imipramine Trimipramine Nortriptyline Desipramine 	<ul style="list-style-type: none"> Lunesta (eszopiclone) Zaleplon Zolpidem 	Estrogen	<ul style="list-style-type: none"> Glyburide Glimepiride 	<ul style="list-style-type: none"> Indomethacin Ketorolac 	<ul style="list-style-type: none"> Carisoprodol Chlorzoxazone Cyclobenzaprine Metaxalone Methocarbamol Orphenadrine
Possible Alternatives	<p>Nausea/Vomiting:</p> <ul style="list-style-type: none"> Ondansetron Prochlorperazine <p>Anxiety:</p> <ul style="list-style-type: none"> Buspirone Escitalopram Sertraline <p>Pruritus:</p> <ul style="list-style-type: none"> OTC non-sedating antihistamines Desloratadine Levocetirizine 	<ul style="list-style-type: none"> Cephalexin Doxycycline Amoxicillin/Clavulanate Trimethoprim/Sulfamethoxazole 	Lower dose of digoxin and monitor level.	<p>Depression:</p> <ul style="list-style-type: none"> Venlafaxine Bupropion Sertraline Escitalopram <p>Neuropathic Pain:</p> <ul style="list-style-type: none"> Gabapentin Pregabalin Duloxetine 	<ul style="list-style-type: none"> Belsomra Melatonin Rozerem Silenor 	<ul style="list-style-type: none"> Alendronate Calcium Vitamin D <p>Vaginal Symptoms:</p> <ul style="list-style-type: none"> Estradiol cream Premarin cream <p>Hot Flashes:</p> <ul style="list-style-type: none"> Femring Citalopram Desvenlafaxine Venlafaxine 	<ul style="list-style-type: none"> Metformin Glipizide 	<ul style="list-style-type: none"> Ibuprofen Meloxicam Naproxen 	<p>Spasticity:</p> <ul style="list-style-type: none"> Baclofen <p>Muscle Spasm:</p> <ul style="list-style-type: none"> Tizanidine

Reasons for the Recommendations

Anticholinergics - First-Generation Antihistamines: Anticholinergic side effects: worsened cognition and behavioral problems; urinary retention **or** incontinence; confusion, delirium; enhanced sedation, blurred vision, dry mouth, constipation, orthostatic hypotension.

Anti-infective: Nitrofurantoin should be avoided in patients with CrCl < 30mL/min because of potential for pulmonary toxicity, peripheral neuropathy and hepatotoxicity, especially when given long-term. Trimethoprim/sulfamethoxazole should be used cautiously in patients 65 years and older with decreased CrCl and on ACE-inhibitors or ARBs due to increased risk for hyperkalemia. FQs (ciprofloxacin and levofloxacin) side effects, including hepatotoxicity, tendon rupture, QT changes, aortic dissection may be increased in aging populations.

Cardiovascular: Digoxin dosages > 0.125 mg/day have been associated with no additional benefit and may have increased toxic effects.

Tricyclic Antidepressants: Highly anticholinergic (dry mouth, blurred vision, constipation), sedation and causes orthostatic hypotension.

Nonbenzodiazepine Hypnotics: Adverse events similar to those of benzodiazepines in aging adults (like delirium, falls, fractures); minimal improvement in sleep latency and duration.

Estrogen: Increased risk of breast and/or endometrial cancer; **not** cardioprotective or cognitive protective in aging women ; not effective for incontinence.

Sulfonylureas, Long-Duration: Prolonged hypoglycemia; risk of SIADH.

Non-COX-selective NSAIDs: Increases risk of GI bleeding/peptic ulcer disease in high-risk groups. Of all the NSAIDs, indomethacin has most adverse effects.

Skeletal Muscle Relaxants: Most muscle relaxants poorly tolerated by aging adults because of anticholinergic adverse effects, sedation, increased risk of fractures; effectiveness of dosages tolerated by aging adults is questionable.

The Centers for Medicare & Medicaid Services (CMS) has developed a list of high-risk medications (HRMs) that should be avoided in the aging population. These HRMs are considered by medical experts to have a high risk of side effects when used in aging populations and can increase morbidity and mortality, decrease quality of life and increase healthcare costs. HRM use is a CMS patient safety measure that contributes to our Star Rating. **For more information about HRMs, please visit [CMS.gov](https://www.cms.gov).**