



# Clinical Pharmacology & Toxicology Pearl of the Week

## ~Drug-Induced Distortion of Taste and Smell~

- ✓ There are greater than 300 drugs known to cause alterations to taste and/or smell
- ✓ The mechanisms by which taste and smell are altered are numerous:
  - Drug-receptor interference for taste/smell neurotransmission
  - Drug interference with neurotransmitter production, secretion
  - Drug-related interference with afferent or efferent sensory neurotransmission
  - Interference with ion channel function
  - Alteration to metal ion binding, uptake in the gastrointestinal tract
  - Drug &/or metabolite excretion into saliva
  - Disturbance to stomach acidity & increased acid reflux
- ✓ While drugs are not the most common cause for altered taste and smell, they are a regular culprit and are likely to be missed if not considered.
- ✓ Of those drugs known to cause dysgeusia, ACE-inhibitors > ARBs (Captopril > others) and Statins (atorvastatin > others) are considered to be the top drugs reported to cause taste alteration (**see Table 1**).
- ✓ Synthroid has a reported incidence of <1% for causing dysgeusia, and it may not be the medication itself rather a phenomenon of hypothyroid patients having greater incidences of dysgeusia, with preserved smell and taste on formal testing.
- ✓ In patients complaining of loss of appetite, weight loss, altered taste/smell, review the medications list and try to eliminate drugs that may contribute to these symptoms.

Table 2 Medications Contributing to Dysgeusia	
Medication Groups Frequently Associated with Dysgeusia	Common Medicines in the Groups Associated with Dysgeusia
Antimicrobial medicines	Macrolides, fluoroquinolones, ampicillin, metronidazole, tetracycline, trimethoprim-sulfamethoxazole, amphotericin B, terbinafine and other antimycotic drugs
Angiotensin-converting enzyme (ACE) inhibitors	Captopril, ramipril
Antiarrhythmic medications	Amiodarone, procainamide
HMG-CoA reductase inhibitors (statins)	Atorvastatin, simvastatin
Proton pump inhibitors (PPI)	
Anti-retroviral medications	Atazanavir, darunavir, and ritonavir
Anti-epileptic medications	Carbamazepine, phenytoin, topiramate
Diuretics	Acetazolamide
Dopamine precursor	Levodopa
Protein kinase inhibitors	Sunitinib, erlotinib, imatinib
Anticholinergic medicines	Antispasmodics, antimuscarinics, tricyclic anti-depressants
Psychiatric medicines	Lithium, aripiprazole
Gout medicines	Colchicine, allopurinol
Muscle relaxants	Baclofen
Endocrine medications	Antithyroid medications, corticosteroids, levothyroxine
Chemotherapeutic agents	5-fluorouracil, cisplatin

**Table 1:** Medications Contributing to Dysgeusia (Syed, Q et al. The Impact of Aging and Medical Status on Dysgeusia. *The American Journal of Medicine*. 2016;129(7))



The Calgary Clinical Pharmacology physician consultation service is available Mon-Fri, 9am-5pm. The on-call physician is listed in ROCA. Click [HERE](#) for clinical issues the CP service can assist with.



The Poison and Drug Information Service ([PADIS](#)) is available 24/7 for questions related to poisonings. Please call 1-800-332-1414, and select option 1.

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