



Managing More and More Meds: Tips for Medication Safety

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Medication Safety

- 66% leave the physicians office with prescriptions
 - 3.4 billion prescriptions in 2005
 - 60% increase from 1995
- Medication Misuse
 - Annual cost of drug related illness and death \$177 billion (2000)
- Importance of protecting yourself or playing an active role

1 Miller L, ed. *Chain Pharmacy Industry Profile*. NACDSFoundation; 2006, pg 8.

2 Kaufman DW, et al. *JAMA* 2002;287:337-44.

3 Aspden P, et al. The National Academies Press; 2007.

4 Ernst FR, et al. *J Am Pharm Assoc*: 2001;41:192-9.

5 Farley D. *FDA FDA Consumer Magazine* 1995.

Medication Safety

- Patients who understand instructions and take medications correctly...
 - Visit doctors less often
 - Fewer hospitalizations
 - Improved health outcomes
 - Increased patient satisfaction

Wolf MS, et al. *Am J Health Syst Pharm* 2006;63:1048–55.

Weiss BD. *20 Common Problems in Primary Care*. New York: McGraw Hill; 1999.

Baker DW, et al. *J General Intern Med*. 1998;13:791–798.

True or False?

- If you are going to the physician's office and need to fast for blood work, you should skip your medications that morning.

False

At Your Visit...



- Take your medications before going
- Go prepared
 - List of questions or problems
 - Bring ALL of your medications
 - Don't forget your OTCs, vitamins, and herbals
- Bring list of medications that need to be refilled
 - 30 day and 90 day supplies (mail-order)



At Your Visit...

- In any week, 4 out of 5 people take a medication
- When a new medication is prescribed
 - 25% are not told the name of the medicine
 - 35% are told about side effects (only serious)
 - 33% are informed of how long the medicine will be used
 - 50% are given dose and directions
- Samples

True or False?

- Pharmacists are required by law to educate patients about their medications.

True

At the Pharmacy...

- Know Your Pharmacist!
- 35% of patients knew their pharmacists' name
- More likely to...
 - Tell them all of your medicines
 - Read product labels
 - Know ingredients of the product
 - Ask health related questions



At the Pharmacy...



- OBRA '90
 - Requires prescription education
 - Most people turn down the education or don't realize they have the opportunity
- Ask Questions!
- Take time to listen to the pharmacist
- If you are not getting the help you deserve, go to a different pharmacy



At the Pharmacy

- Use only 1 pharmacy
- Provide them with a complete med list
- Call for refills before you run out
 - Set reminders on calendar
- Purpose, Proper Use, Potential Side Effects
- Ask about drug and food interactions
 - Over-the-counter meds, Grapefruit
- Protect against Look Alike-Sound Alike meds

At the Pharmacy

- Read ingredients in over-the-counter products
 - Same brand name but different ingredients or strengths
- Herbals
 - Not safer
 - Limited regulation on manufacturing
 - Limited information on safety



Medication Questions



- What is the medicine for?
- How long do I use it?
- When should I feel better?
- What side effects should I watch for?
 - What should I do if I experience these?
- When should I take it?
 - With or without food? Special administration?
- Can I drink alcohol while taking it?
- What if I forget a dose?
- What to do with current medications?

Medication Lists

Brand Name	Generic Name	Strength	When to take			Directions
			Morning	Afternoon	Evening	
Flovent	Fluticasone	44 mcg inhaler	2 Puffs		2 Puffs	Shake well. Inhale 2 puffs by mouth with a spacer twice a day. Rinse mouth out after each use.



Know Your Medications

- Brand vs. Generic
 - Equally effective
 - Know both names or check with your pharmacist
 - Duplication risks
- Know what your medications look like
 - If it is different, check with the pharmacist
- Check before you crush or split your tablets

Know Your Medications

- Follow the directions
 - **Don't** double doses, cut in half, or skip doses
 - **Don't** give others your medications
 - **Don't** take other people's medications
- Antibiotics
 - Only effective for bacterial infections
 - Don't push for antibiotics
 - Finish your antibiotics
 - Resistance is on the rise

Know Your Medicines

- Remember to take your medicines
 - Establish a routine
 - Use reminders on calendar, email, cell phone, etc.
 - Use pill boxes
- Tell your providers about side effects
- Discuss concerns
- Patient assistance programs
 - www.needymeds.com



Food-Medication Interactions

- Food & Beverage interactions can
 - Prevent med from working
 - Cause a new side effect
 - Cause a side effect to get better or worse
- Know if your meds should be taken
 - With food
 - After eating
 - On an empty stomach
 - Low fat meals

Food-Medication Interactions

Avoid Alcohol

- Antihistamines
- Acetaminophen
- Narcotic pain meds
- Metronidazole*
- Benzodiazepines
- Antidepressants
- Antipsychotics
- Sleep aids

Separate from Food

- Digoxin
- Levothyroxine
- Fluoroquinolones
- Tetracycline, Minocycline, Doxycycline
- Antifungals
- Bisphosphonates

Food-Medication Interactions

- Vitamin K foods and warfarin
- Tyramine foods
 - MAO-I (Phenelzine, tranylcypromine)
 - Linezolid
- Caffeine
 - Albuterol, Theophylline
 - Blood pressure or heart medications
- Potassium Foods and Salt Substitute
 - ACE-I, ARB

Food-Medication Interactions: Grapefruit & Lime, Pomelo, Seville Oranges

- Amiodarone, Dronedrone
- Statins
- Apixaban, Cilostazol, Eplerenone, Rivaroxaban
- Benzodiazepines
- Budesonide rectal
- Calcium channel blockers
- Carbamazepine
- Clopidregrel (ineffective)
- Colchicine
- Dextromethrophan
- Erythromycin
- Urinary anticholinergics (fesoterodine, solifenacin)
- Losartan
- Lurasidone, Quetipine, Ziprasidone
- Oxycodone
- Pimozide
- Quinidine, Quinine
- Scopolamine
- Sildenafil, Vardenafil, Tadalafil
- Silodosin, Tamulosin

Not a complete List

True or False?

- You can store your medications in the medicine cabinet of your bathroom.

False

At Your Home...

- Medication Storage
 - Cool, dry location
 - Avoid the bathroom or kitchen near the stove
 - Keep away from children and pets
- Consider locking up
 - Prescription pain killers
 - Anxiety meds
 - ADHD meds
 - Prescription sleep aids



True or False

- Every household should have a bottle of ipecac available.

False



At Your Home...

Poison Prevention



- Keep all meds, chemicals, etc. out of reach
- Childproof vs. Child Resistant
- Never call medicine candy
- Keep in the original containers
- Keep Poison Control number handy
- Use Mr. Yuk stickers
- Review household plants
- Do not use Ipecac

Get a Yearly Medication Check-up

- Medication therapy management
- Review
 - Indications
 - Effectiveness
 - Drug Interactions including OTC, herbals
 - Side Effects
- Look for expired medications



Medications: Be Cautious

- Meet with your MD or pharmacist
- Look for meds that can increase risk for
 - Weakness
 - Fatigue
 - Fall risk
- Don't stop any medications without discussing it first!

Medications: Be Cautious

- Non-selective alpha blockers
 - terazosin, doxazosin, etc
- Benzodiazepines
 - lorazepam, alprazolam, etc
- Muscle relaxers
 - carisoprodol, methocarbamol, etc
- Opioids
 - hydrocodone, codeine, oxycodone, etc
- Typical antipsychotics
 - promethazine, thiorazine, haloperidol, etc

True or False?

- When you find expired medications, flush them in the toilet.

False

Expired Medications

- Do not continue using
 - Less effective
 - Increased side effects
 - Aspirin
 - Increased harm
 - Tetracycline
- May expire before expiration date
 - Insulin
 - Inhalers

Expired Medications



- Do not flush!
- Take out of the original container
- Mix with undesirable things
 - Kitty litter, coffee grounds, etc.
- Put in a sturdy container
 - Plain box, empty can, sealable bag
- Throw in trash just before removal
- Patches

Traveling



- Bring a med list
- Have your pharmacy and physician phone numbers
 - Medications can be transferred to another pharmacy
 - Vacation refill early if needed
- Keep in the original container
- Do not leave in your car
- Keep in a carry on bag
- Special note for some items with air travel

Preventative Medicine

- Vaccines
 - Influenza
 - Tdap
 - Pneumovax
 - Hepatitis A
 - Hepatitis B
 - Zostavax
- Screening
 - Pap/Pelvic
 - Mammograms
 - Prostate
 - Colonoscopy
- Calcium and Vitamin D
- Aspirin
- Statins

Estimating Daily Dietary Calcium Intake

$$\underline{2} \text{ cups milk/d} \times 300 \text{ mg} = \underline{600} \text{ mg}$$

$$\underline{\text{Occ.}} \text{ cups of yogurt/d} \times 300 \text{ mg} = \underline{0} \text{ mg}$$

$$\underline{\text{Occ.}} \text{ 1 oz cheese/d} \times 300 \text{ mg} = \underline{0} \text{ mg}$$

$$\text{Dairy Total} \quad \underline{600} \text{ mg}$$

$$\text{Calcium from other foods} \quad + 200 \text{ mg}$$

$$\text{Dietary Total} \quad \underline{800} \text{ mg}$$

Daily Calcium Requirements

Age	Ca (mg)
1-3	500
4-8	800
9-18	1300
19-50	1000
>50	1200
Pregnant \geq 18 years old	1000-1200
<18 years old	1300

Don't forget the Calcium!



Calcium Supplements



<i>Form of Calcium (% elemental)</i>	<i>Strength</i>	<i>Elemental Calcium</i>
Calcium Carbonate (40%)		
Generic Os-Cal	1250 mg	500 mg
Caltrate	1500 mg	600 mg
Viactiv Chews	1250 mg	500 mg
Tums (extra strength)	1250 mg	500 mg
Tums (regular strength)	500 mg	200 mg
Calcium Citrate (21%)		
Citracal	950 mg	200 mg
Calcium Gluconate (9%)	650 mg	58 mg

References

- Agency for Healthcare Research and Quality
 - www.ahrq.gov
- Federal Drug Association
 - www.fda.gov
- Institute for Safe Medicine Practices
 - www.ismp.org
- Consumer Med Safety
 - www.consumermedsafety.org
- US Pharmacopeia
 - <http://www.usp.org/USPVerified/dietarySupplements/>
- American Pharmacist Association
 - www.pharmacist.org

Questions?

