

# What's the BIG DEAL about medications?



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# Healthy Aging –

## Why medications are such a big deal

- Take a minute and think about who your know who:
  - Had a heart attack way too young
  - Had a stroke
  - Had a fall that changed their abilities
  - Just sits on the couch with no motivation
  - Gets dizzy for no apparent reason
  - Thinks they have dementia and are scared

# What changes as we age?

- Kidney function starts a very gradual decline in your late 30's or early 40's.
- Liver size and blood flow to your liver diminish. The number of cells shrinks. There is less activity of the enzymes that break down medications.
- Food and medications move through the intestine more slowly.
- The volume of urine that the bladder can hold decreases. Bladder muscles weaken.
- For men, the prostate gland increases in size.
- For women, the urethra shortens and comes thinner. So, risk of urinary tract infection goes up.

# What changes as we age?

- Muscles weaken as growth hormone levels decline.
- Aldosterone levels decrease, so risk of dehydration goes up.
- The immune system slows down. So, risk of infection and cancer go up. Also, it can take longer to treat an infection.
- Heart muscle and blood vessels get stiffer. This can increase risk of high blood pressure. Also, with exercise, the heart can't pump as much blood or speed up as much as it did at younger ages. So, exercise capacity is lower.
- The muscles involved in breathing weaken. There is a decline in the number of small sacs in the lungs where oxygen is passed to the blood.
- The amount of water in the body goes down while the body fat goes up.

# Sensory Senescence

Vision

Hearing

Olfaction/Taste

Touch

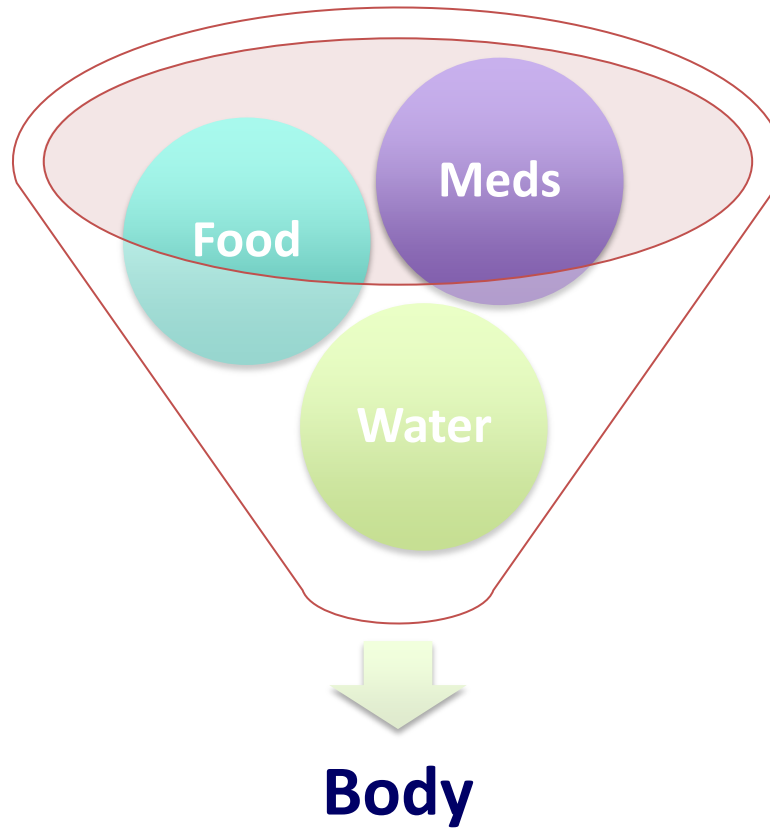
- Medications can impact these
- These can amplify the risks for falls, nutrition deficiency, dizziness, and more

# Pharmacokinetics

What the body does to the drug

**What are the kinetic changes that occur as we age?**

# Absorption



Common medications can impact this, but aging itself has little impact

# Distribution

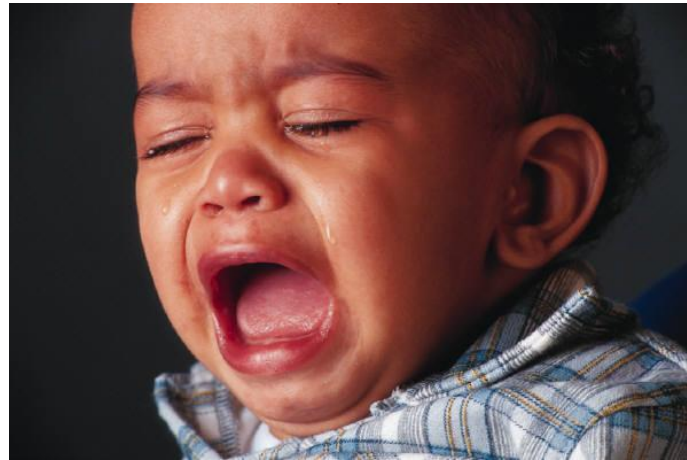
- Where in the body the medication goes
- With aging, total body water decreases, total body fat increases





# Metabolism

- Break down
  - How the medication is broken down in the body
- Liver
  - To a more or less active metabolite, usually less
- Some enzymes fail to act until about age 5; some diminish with advanced age



# Excretion



- How the medication is eliminated from the body
  - Feces
  - Urine
- Renal function gradually declines with age after about age 40
- Medical conditions (diabetes)
- Medications
- Other
  - can further decrease renal function





# Medications & Clear Thinking

# HELP your thinking

- Meds that improve your
  - Heart
  - Blood flow
  - Breathing
  - Thyroid
  - Depression



# HINDER your thinking

- Anxiety/nerves
- Depression – older meds
- Sleep
- Pain
- Seizures
- Nerve pain

## **Benzodiazepines:**

**Diazepam  
(Valium)**

**Alprazolam  
(Xanax)**

**Lorazepam  
(Ativan)**

# HINDER your thinking

## Anticholinergic

- Incontinence
- Parkinson's Disease
- Allergy/cold/flu
- Antispasmodic
- Diarrhea
- Muscle relaxants
- Nausea/vomiting
- Antipsychotics
- Dizziness/motion sickness



**DRY**



# HINDER your thinking

## Over-the counter & Sleep Agents

### Diphenhydramine



Melatonin is safer

# Medication/Care Coordination

## Description of Services

- **M**edication management
  - Thorough evaluation of all medications, vitamins, supplements, over-the-counter, holistic medications
- **A**ssessment for preventable, life-altering events
  - Risk assessments for debilitating and often preventable conditions such as heart attack, stroke, dementia that can contribute to loss of independence



# Medication/Care Coordination

## Description of Services

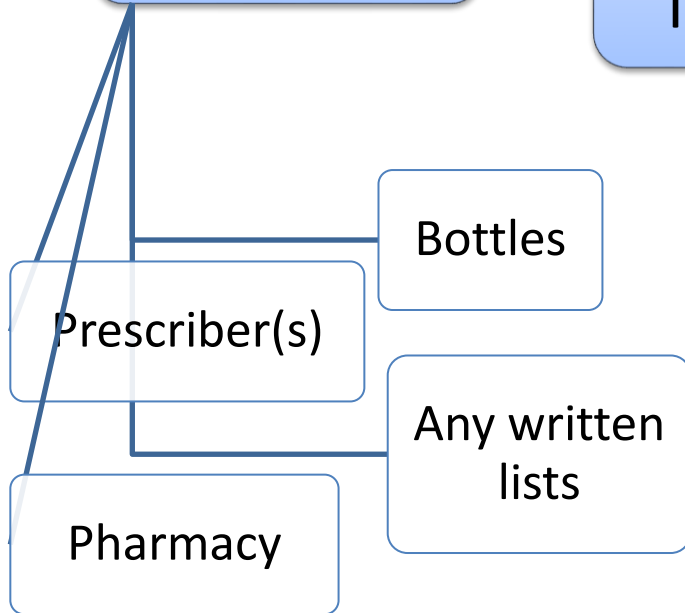
- **Safety Assessment**
  - Falls risk assessment including medications, environment, and fitness.
- **Healthcare team collaboration and coaching**
  - Learn to communicate effectively with your healthcare providers and use us to collaborate with your providers to enhance your care

# Medication/Care Coordination

Determine  
all current  
medications

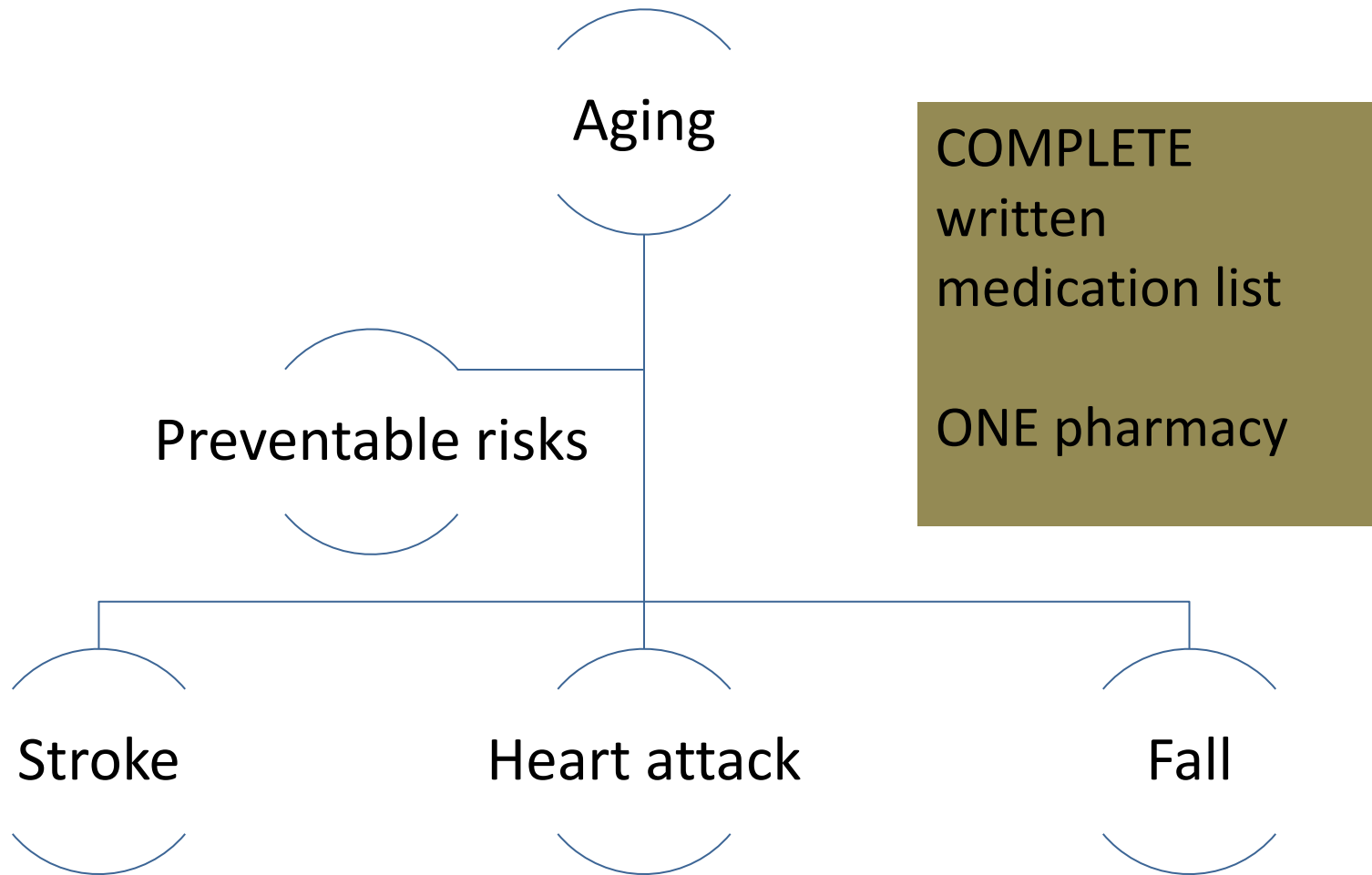
Identify any  
differences  
in the past  
few days

Identify any  
recent  
medication  
changes



Over-the-counter  
Supplements  
Vitamins  
Herbal remedies

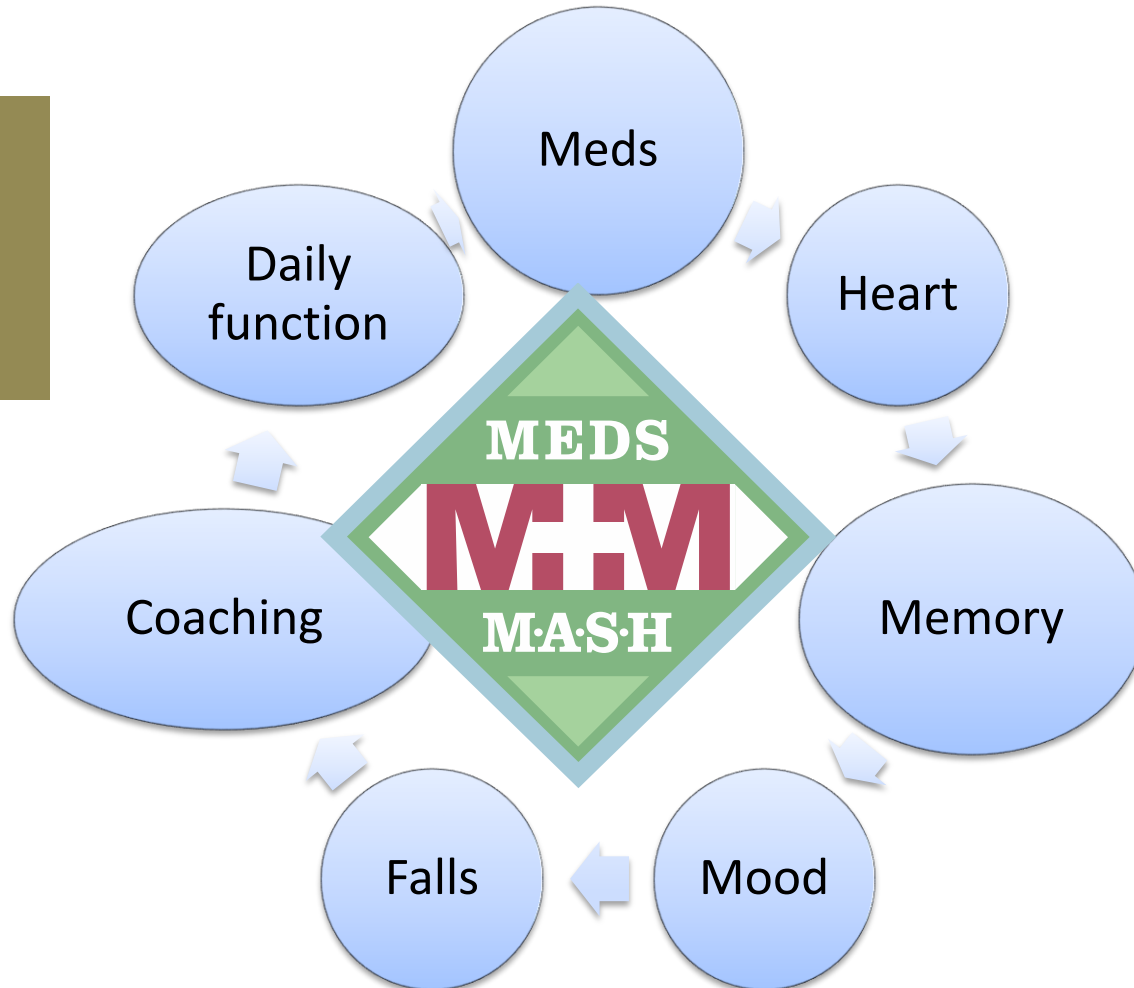
# Medication/Care Coordination



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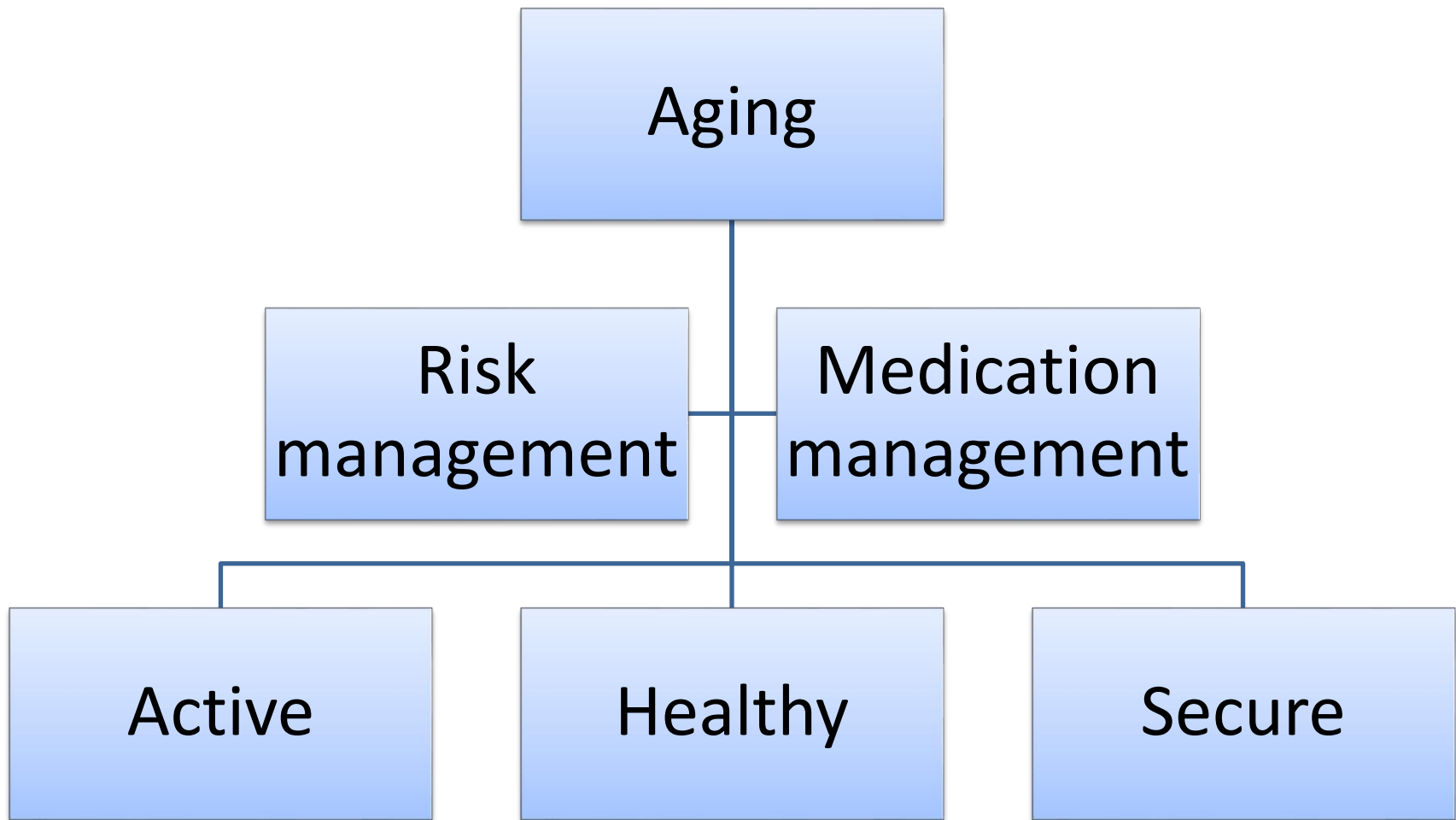
## Big picture

Board  
certified  
geriatric  
specialist



# Medication/Care Coordination

## Health Aging





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