

PorcuPAIN

Don't Get Stuck With Pain

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How the Elderly Differ Physiologically
From the Young in Response to Pain and Medications



Important physiological changes in the elderly that affect medications:

1. Less total body water
 - a. If the drug is water loving, the drug dissolves in less water; thus the concentration of the drug increases which could increase its effect and/or side effects.
2. More fat
 - a. If fat loving drugs are used, there is more fat for the drug to be distributed in and released slowly, which could result in a longer duration of action.
3. Less protein
 - a. Many drugs bind greatly to protein.
 - b. When there is less protein to bind to, there is more of the drug in the circulation; thus there is an increase in concentration of the free drug in the blood, which could result in toxicity.
4. Less cardiac output
 - a. Slower circulation time means it will take longer for the pain drug to reach its site of action; thus, it will take longer for the drug to work.
 - b. Less blood flow to the liver causes decreased breakdown of the drug, so more of it stays around longer, which could cause it to last longer.
5. Liver size decreases with age
 - a. This decreases the ability for the liver to breakdown drugs; which could result in toxicity.
 - b. A smaller liver also results in fewer enzymes that breakdown drugs; causing toxicity.
 - c. There is a reduced "first pass" extraction of drugs; potentially causing toxicity. (After giving a drug by mouth, it first goes to the liver where a lot of it is removed even BEFORE it goes into the blood stream.)
6. Decreased excretion of drugs by the kidney because of a loss of kidney cells

As a result of the above, generally speaking in elderly patients who receive pain medications, there is a higher effect of the drug (especially opioids) and a longer duration of action. Thus a good rule of thumb when adjusting pain medications in the elderly is to: **START LOW AND GO SLOW**. Start with a low dose and do not make changes in the drug regime too frequently.

Elders feel pain just as acutely and chronically as younger patients. They don't have fewer pain nerves. Their response to pain is just like anyone. Depression may occur from unrelieved pain; however, the elderly do have more painful conditions than young people. For instance, osteoarthritis is a painful condition that usually occurs as one gets older. Elders may appear to "complain" of more pain, when in fact they actually have more painful conditions! By the way, they really are **not** complaining of pain when you assess them for pain, they are "stating," "reporting," or "telling" you of their pain.

MoLANE Planning Committee Members:

- Missouri Pain Initiative
- Missouri Association of Homes for the Aging
- Missouri Health Care Association
- Missouri Coalition Celebrating Care Continuum Change
- Missouri Association of Nursing Home Administrators
- Missouri Department of Health and Senior Services
- Missouri League for Nursing
- Missouri State Long-Term Care Ombudsman
- Missouri Board of Nursing Home Administrators
- National Association of Health Care Assistants
- Primaris, Missouri's Medicare Quality Improvement Organization
- Quality Improvement Program for Missouri (QIPMO)

Watch for more PAIN tips!

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