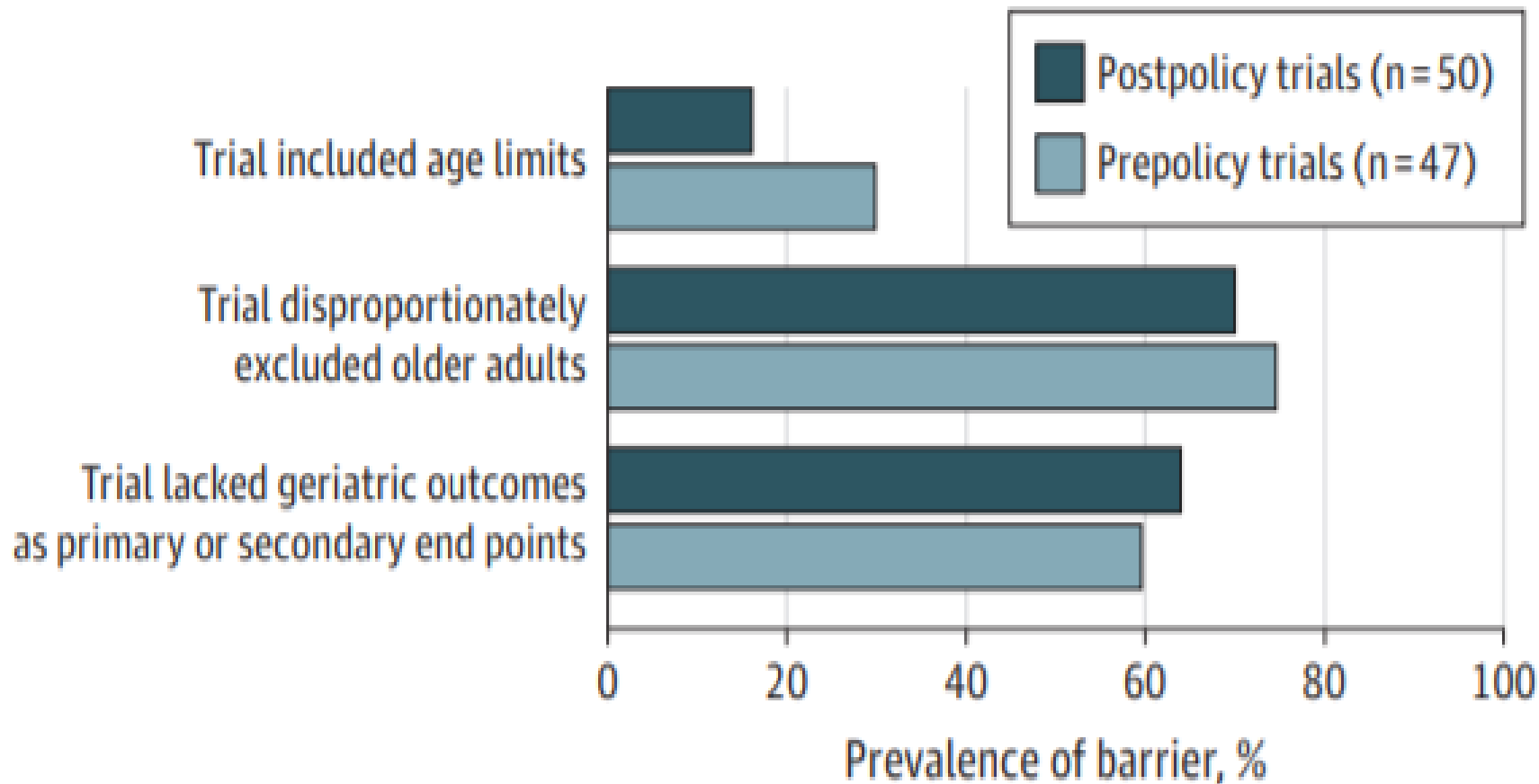


# Aging, Multimorbidity, Polypharmacy, and Inter-current Health Events *Research Implications*

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# Barriers to Representation of Older Adults in Cardiovascular Disease Trials Before and After the Inclusion Across the Lifespan Policy



# The Exclusion of Older Adults with Multimorbidity

- The most common chronic condition that older adults experience is multimorbidity.
- 2 of every 3 older adults have multiple chronic conditions.
- Of 190 clinical trials that explicitly considered multiple chronic conditions in the selection process, 94% excluded these patients.

# Polypharmacy in Older Adults

- In 2000, 24% of Americans age 65+ used 5 or more prescription drugs.
- In 2012, 39% of Americans age 65+ used 5 or more prescription drugs.

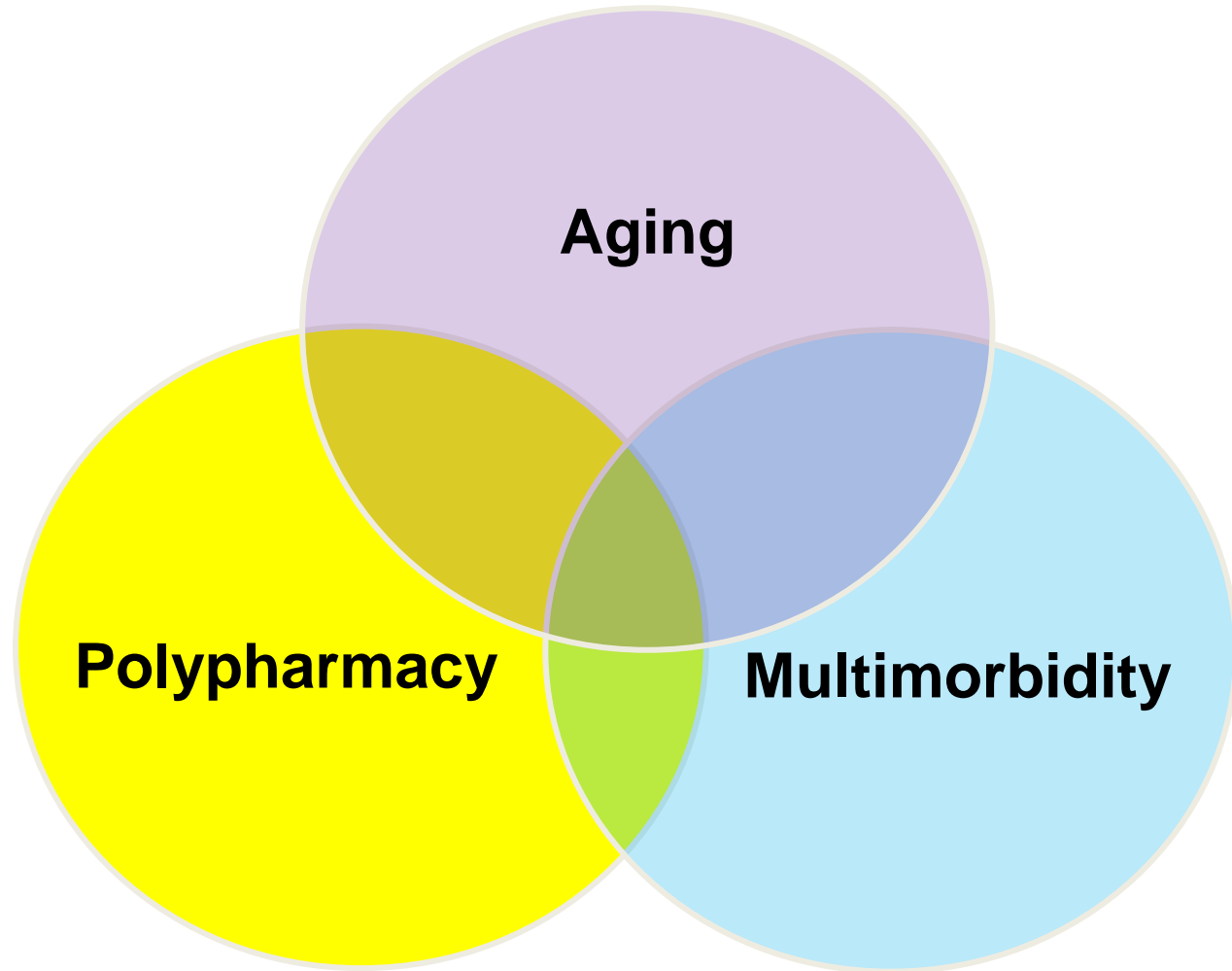
# Polypharmacy is a contextual issue

- Polypharmacy can be a good thing, but...
- Polypharmacy increases the risk for inappropriate prescribing.
- Polypharmacy increases the risk for adverse drug events.
- Polypharmacy correlates with multimorbidity and vice versa.
- Polypharmacy is a common implicit reason for the exclusion of older adults from participation in clinical trials.

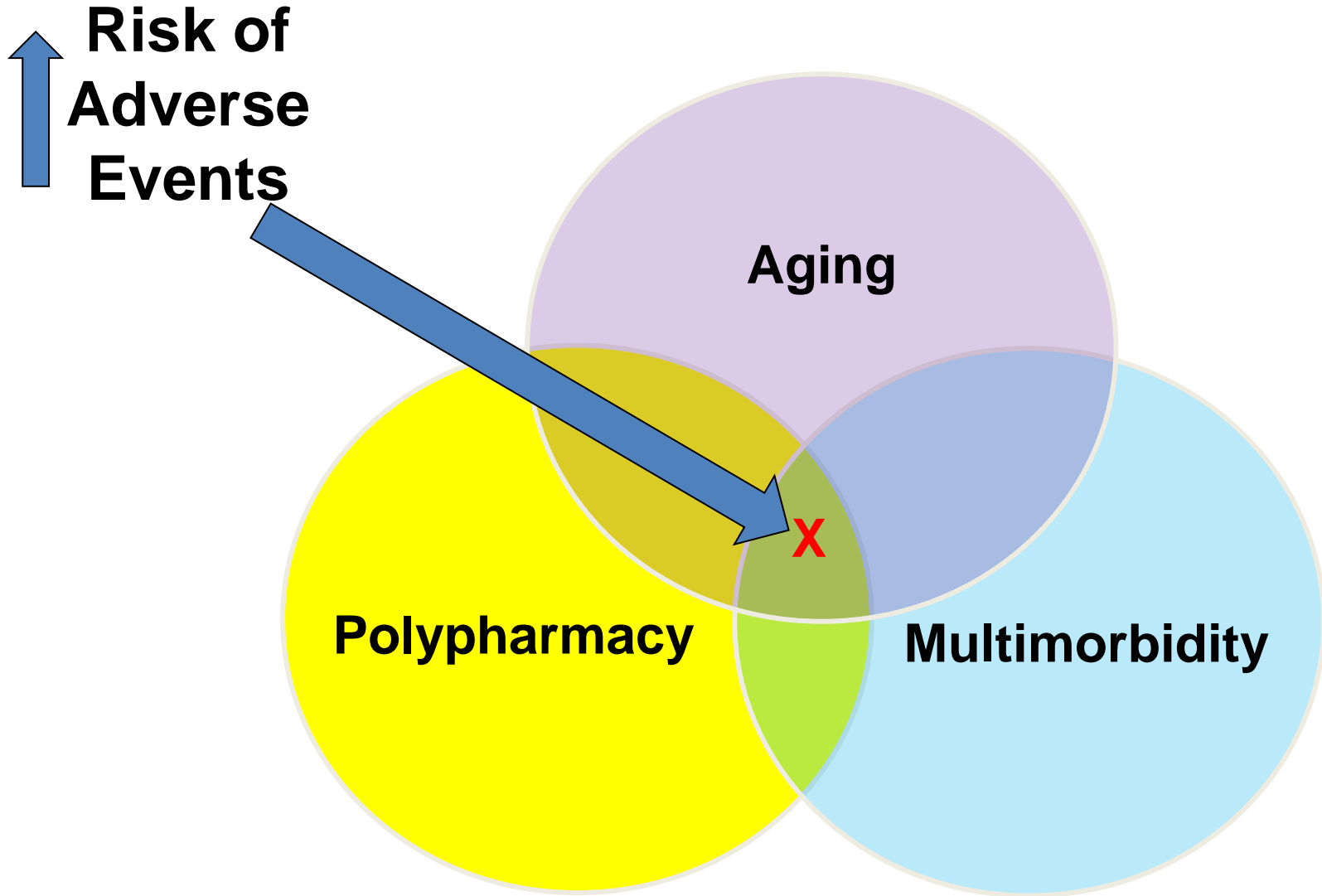
# Clinical Trials Excluding Participants for Polypharmacy or Concomitant Medication

Condition (N of Trials)	Percent of Trials Excluding
COPD (N = 14)	29%
Heart Failure (N = 45)	27%
Stroke (N = 114)	17%
Prostate (N = 65)	15%
ACS (N = 75)	14%
Lung Cancer (N = 117)	14%
Osteoarthritis (N = 15)	13%
Pneumonia (N = 48)	10%

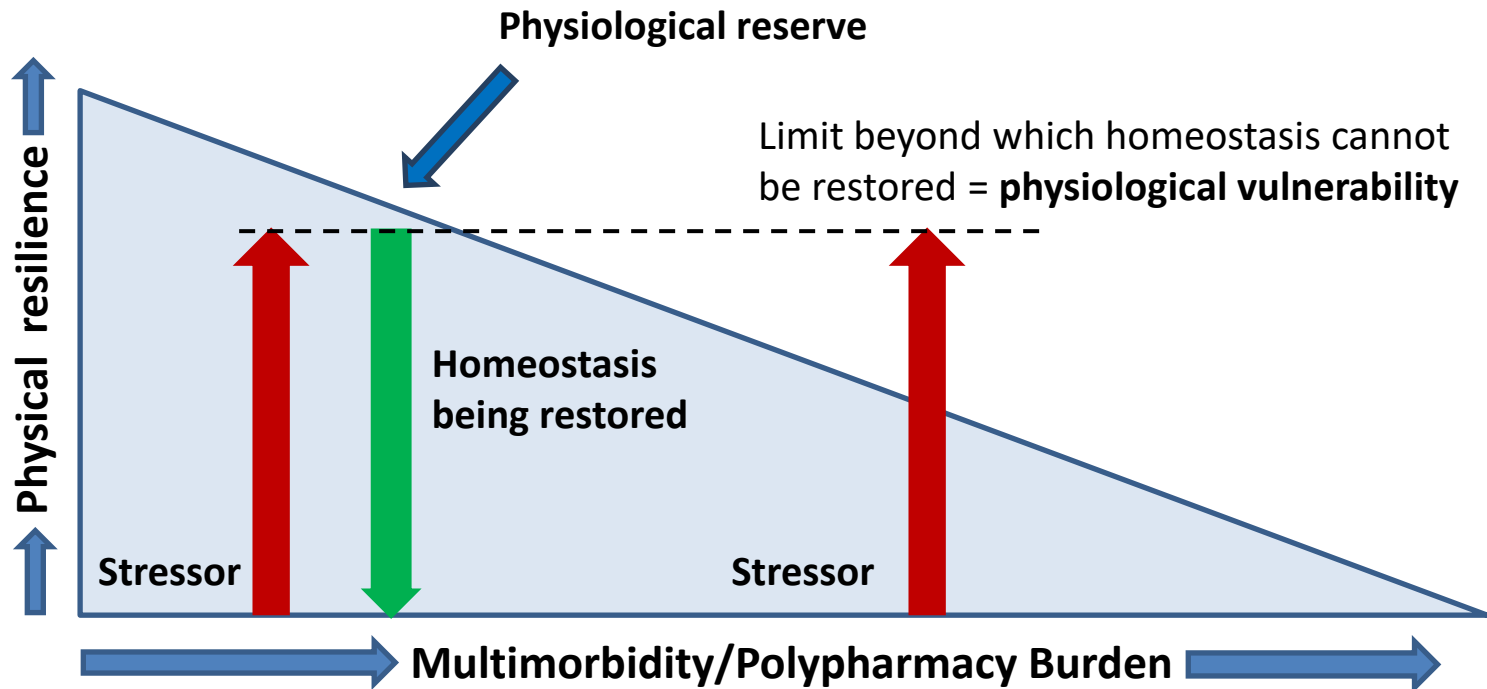
# Aging, Multimorbidity, Polypharmacy, and Inter-current Events



# Aging, Multimorbidity, Polypharmacy, and Inter-current Events

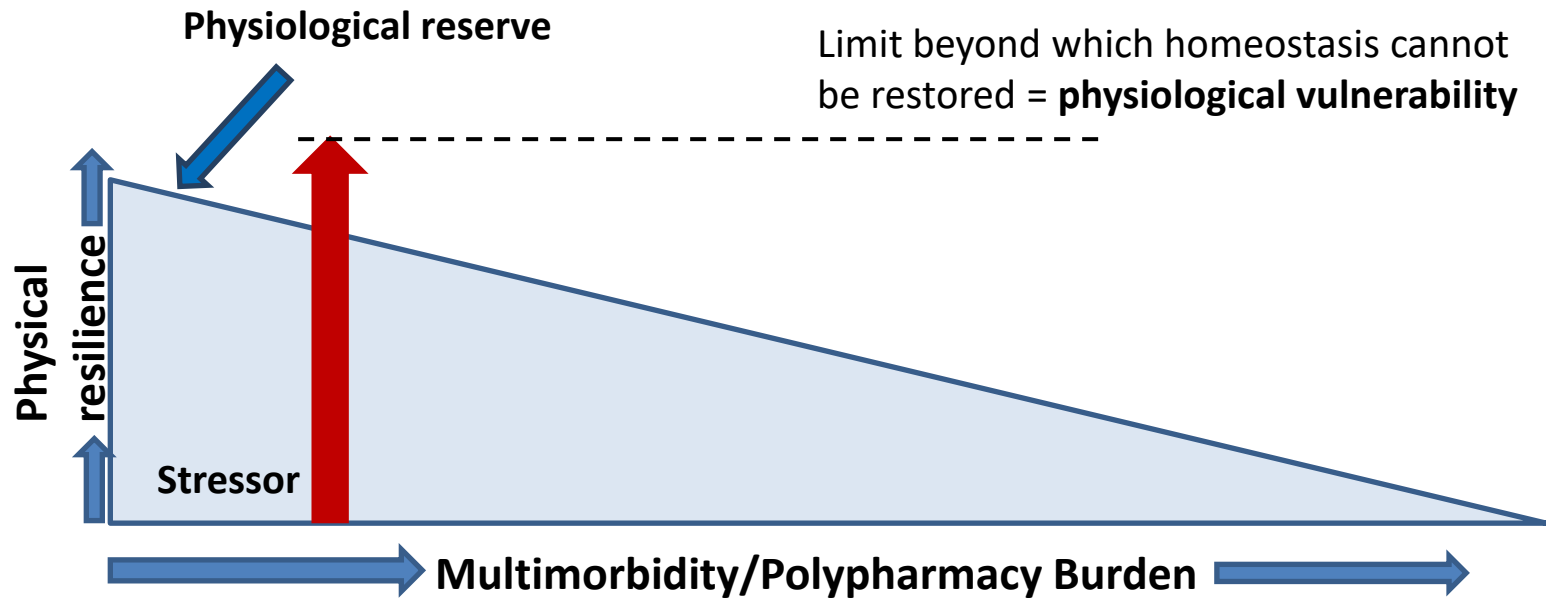


# Risk of Inter-current Health Events



Adapted from: Whitson HE, et al. Physical Resilience: Not Simply the Opposite of Frailty. *Journal of the American Geriatrics Society*. 2018;66(8):1459-1461.

# And with advancing age...



# Summary: Inter-current Health Events Challenge the Conduct of Efficacy Studies

- Polypharmacy, concomitant medications, and multimorbidity increase the risk for inter-current health events, especially with advancing age.
- Polypharmacy, concomitant medications, and multimorbidity are common reasons for the implicit exclusion of older adults from clinical trials.

Diversity is a fact. Inclusion is a choice.

*Attributed to Justin Trudeau, Prime Minister of Canada*