

Fall Prevention

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Part 1: Introduction

Part 2: Risk Factors

Part 3: Evidence for fall prevention interventions

Part 4: Centre of Expertise for Fall & Fracture prevention

Part 5: Guidelines for fall prevention

Part 6: Conclusion

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±2700



±245



± 2



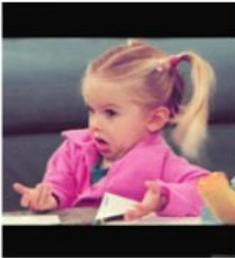
(CDC Important Facts about Falls, 2017)



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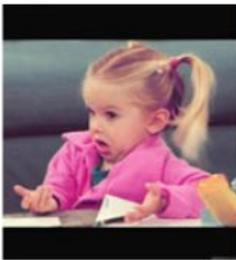


Women fall more than men

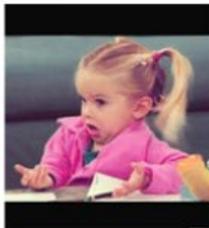


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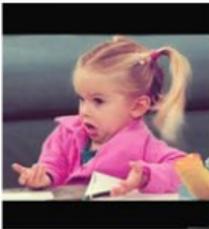
Restraints help to prevent fall incidents



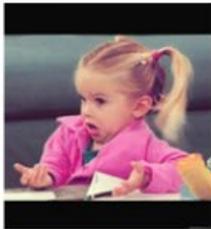
Most fall incidents are caused by obstacles such as carpets, etc.



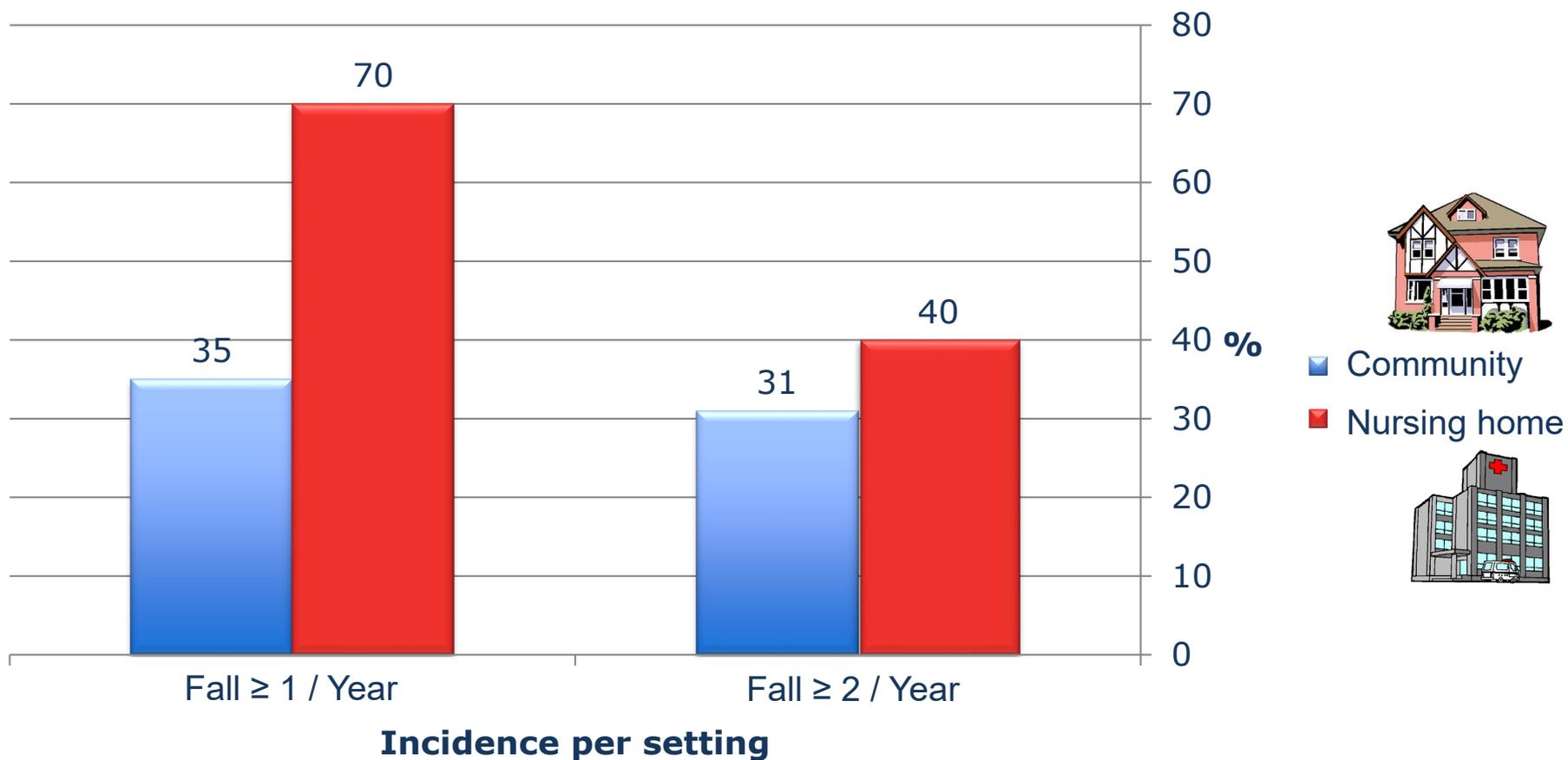
Older persons with a hip fracture have a higher mortality rate.



Multifocal glasses are recommended to prevent falls



Fall incidence 65+ community versus nursing home



• Consequences fall

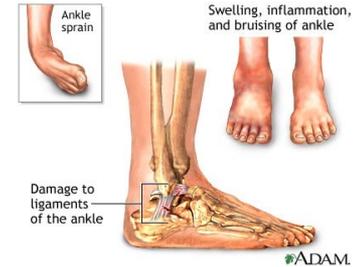
– Physical

- Minor injury: 17-20%
 - e.g. bruise, sprain
- Severe injury: 10-15%
 - e.g. Hip fracture: 4,6%

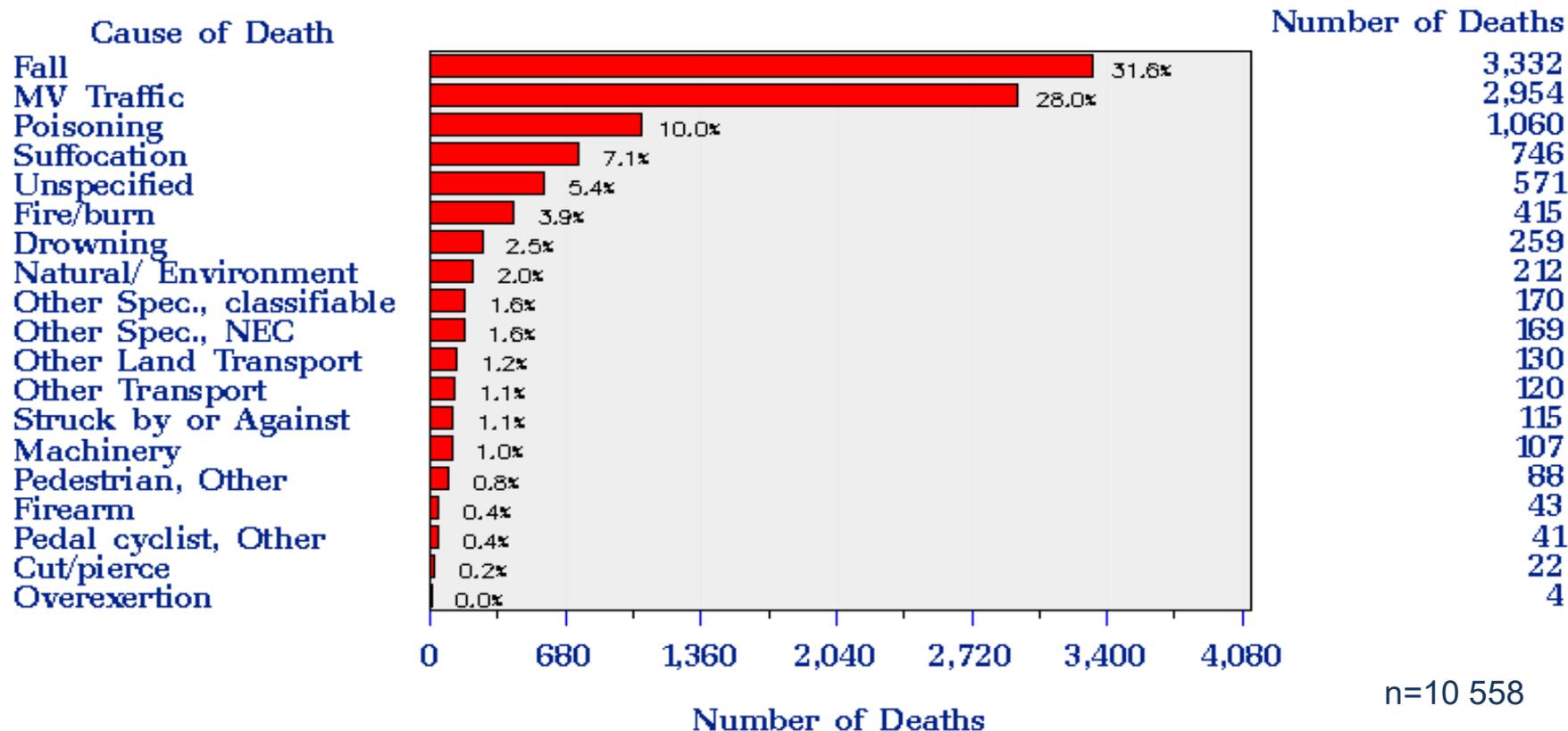
– Psychosocial

– Others

- Only 13% regains ADL independence
- 35% dies within one year
- ↗ mortality risk remains 10-15j. after hip fracture

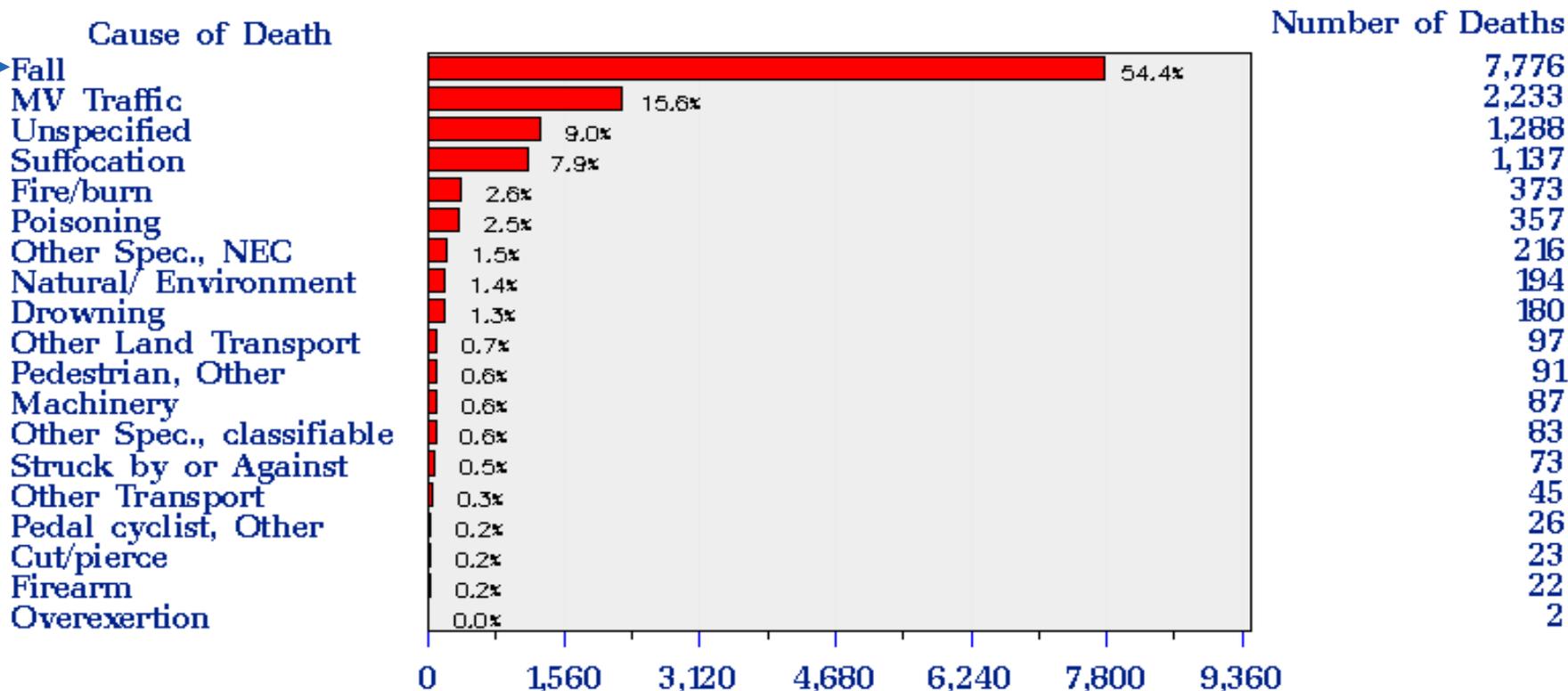


Number of deaths in the VS, aged 65 to 74 as a result of accidental injuries (2012)



National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, WISQARS

Number of deaths in the VS, aged 75 to 84 as a result of accidental injuries (2012)



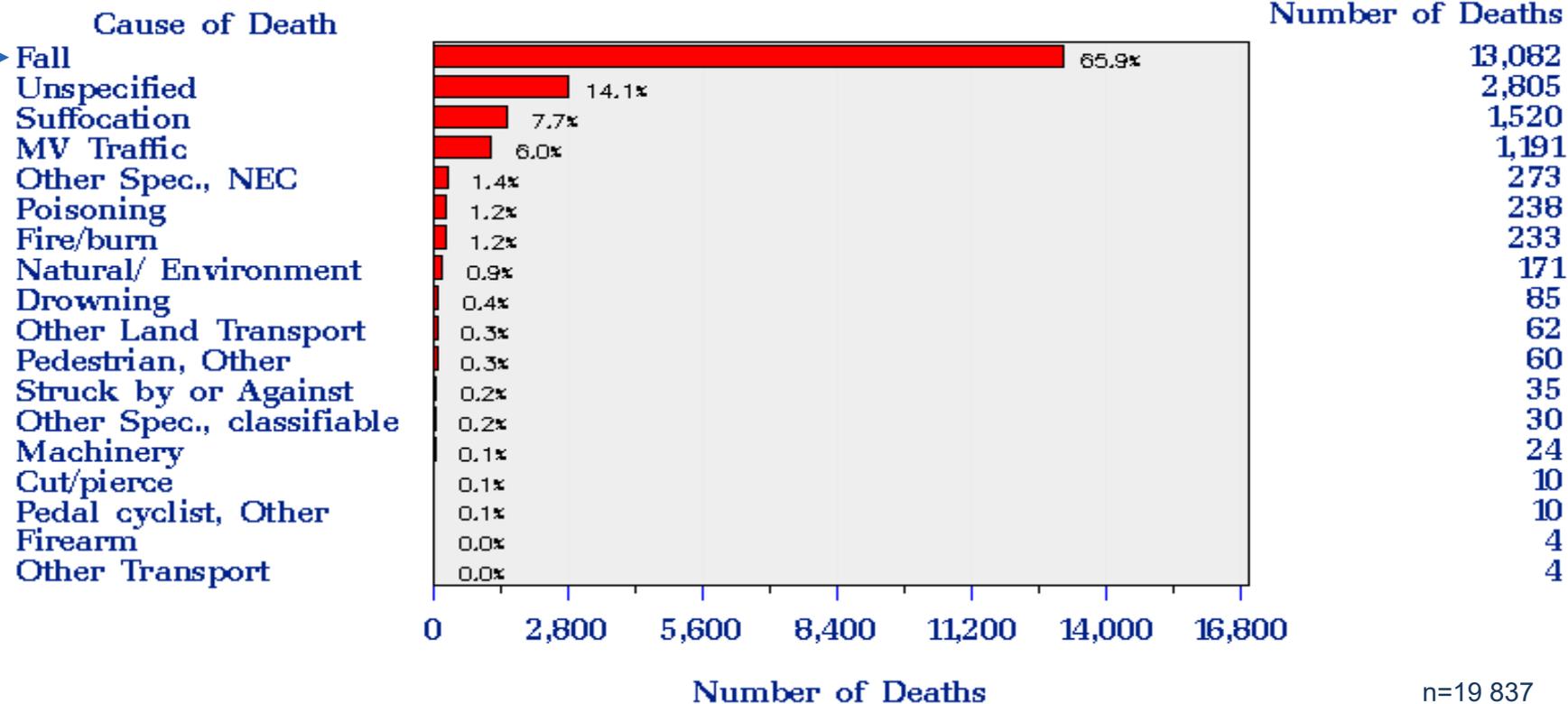
Number of Deaths

n=14 303

National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, WISQARS



Number of deaths in the VS, aged 85+ as a result of accidental injuries (2012)

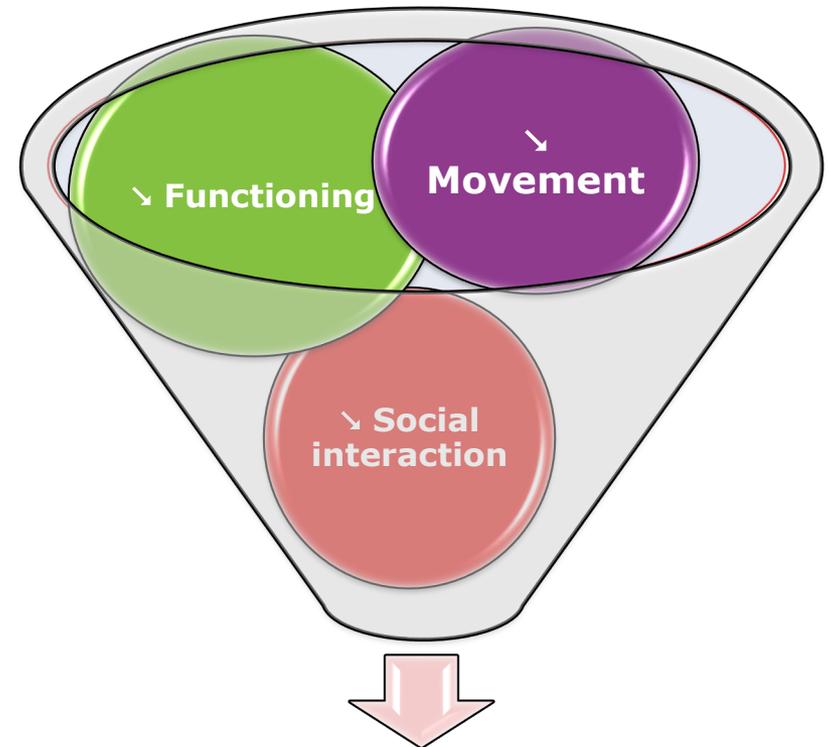


National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, WISQARS



- **Consequences fall**

- Physical
- **Psychosocial:**
e.g. Fear of falling
- Others



Fall risk ↗↗↗

- **Consequences fall**
 - Physical
 - Psychosocial
 - **Others:**
 - Economic consequences
 - Legal consequences
 - Feelings of fear or guilt

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- Fall = acute event
- Fall risk = chronic condition
- Complexity of a fall → mostly interaction of various risk factors

INTRINSIC	EXTRINSIC
Impaired balance, mobility and muscle strength	Environmental factors e.g. poor lighting, ...
Orthostatic hypotension	Behavior older person
Impaired vision	Polypharmacy
Functional & cognitive decline	Hazardous medication
...	...

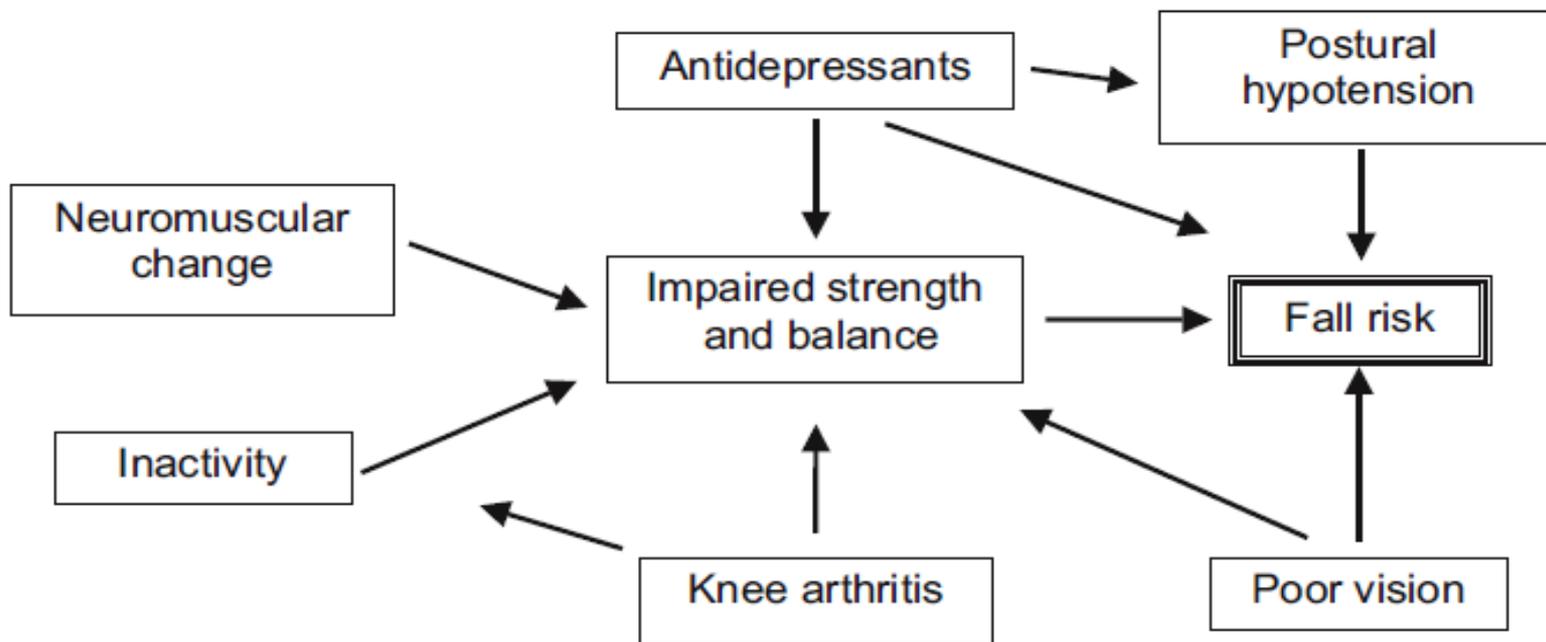


- Maria, 85 year old woman
- Assisted living facility
- Medical history: cognitive impairment & osteoporosis
- Problems with mobility
- Different medicines
- ...



• Interaction RF precipitating to falls

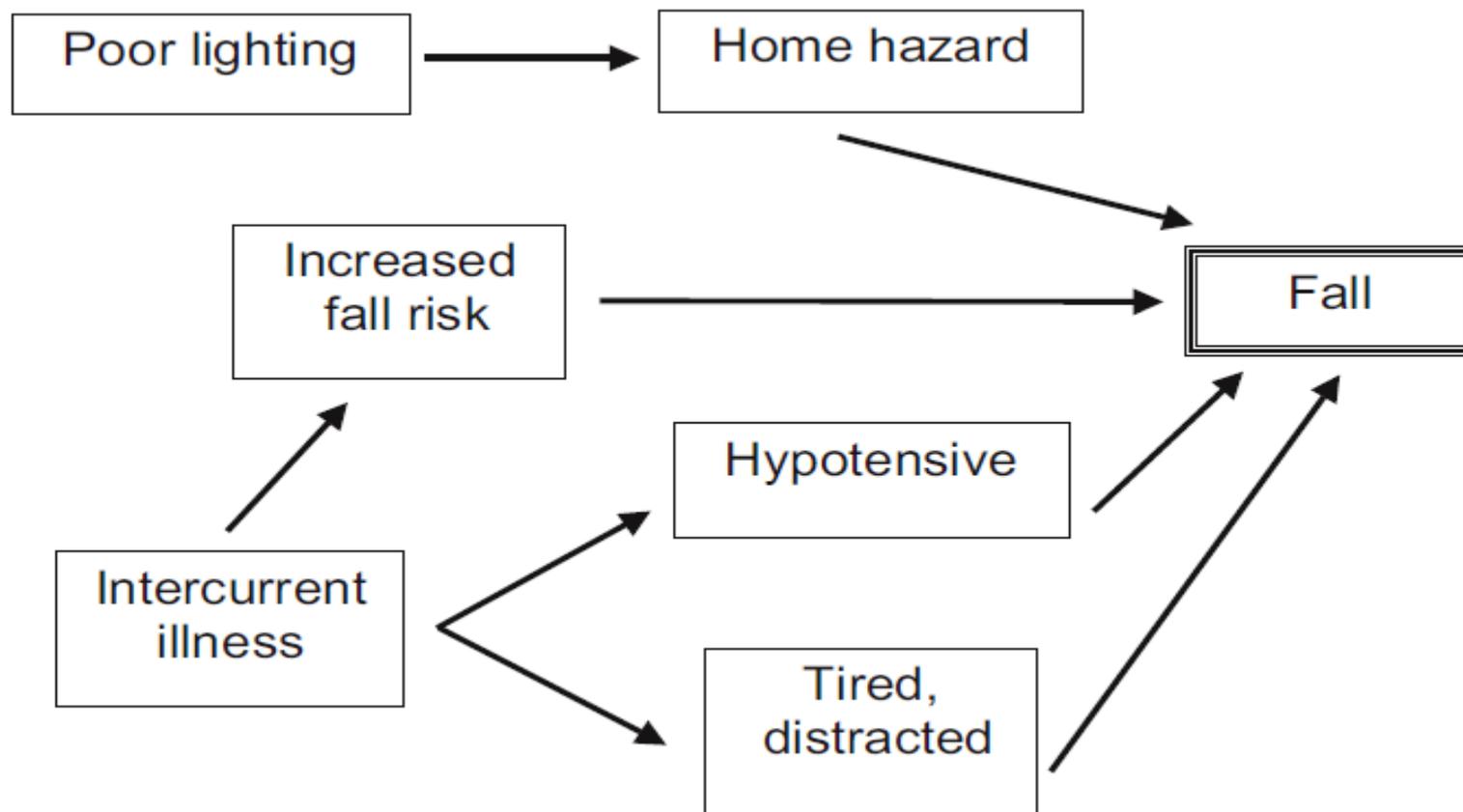
(Cambell 2006)



80 year old woman living alone during the winter

- Interaction RF predisposing to falls

(Cambell 2006)



Risk factors







Which fall risk factors can you identify in Maria's case?



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- In literature different types of interventions exist:
 - Unifactorial interventions
 - Multiple interventions
 - Multifactorial interventions

(Lamb et al. 2007, Lamb et al. 2011)

- Unifactorial interventions:

1



to all



(Lamb et al. 2007 , Lamb et al. 2011)

- Multiple interventions:

more than one



to all



(Lamb et al. 2007 , Lamb et al. 2011)

- Multifactorial interventions:

more than one



individual
assessment



(Lamb et al. 2007 , Lamb et al. 2011)



Which type of intervention will be the most effective for fall prevention

Unifactorial interventions

Multiple interventions

Multifactorial interventions

- Systematic review and meta-analyse
- Belgian context

CLINICAL INVESTIGATIONS

Characteristics and Effectiveness of Fall Prevention Programs in Nursing Homes: A Systematic Review and Meta-Analysis of Randomized Controlled Trials

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- Characteristics fall prevention programs
 - 6 unifactorial
 - Training & education (3)
 - Medication (2)
 - Vitamin D supplements (1)
 - Exercise program (1)
 - 1 multiple
 - Exercise program & continence training (1)
 - 6 multifactorial

(Vlaeyen et al. 2015)

Evidence: nursing homes

- Characteristics multifactorial fall prevention programs

Study	Intervention components							
	Exercise - program	Medication	Orthostatic hypotension	Environment	Hip protector	Sight	Feet & shoes	Goal setting & Feedback
Becker Rapp	X	0	0	X	X	0	0	X
Dyer	X	X	X	X	0	X	X	0
Kerse	X	0	0	0	0	0	0	X
McMurdo	X	X	X	X	0	X	0	0
Neyens	X	X	0	X	0	0	0	0
Ray	0	X	X	X	0	0	X	X

→ Multidisciplinary interventions in all studies except Kerse et al.

(Vlaeyen et al. 2015)



- Conclusion new meta-analysis
 - No significant decrease in
 - Number of falls
(RR=0.93, 95% CI: 0.76-1.13)
 - Number of fallers
(RR=0.97, 95% CI: 0.84-1.11)
 - BUT 21% ↓ recurrent fallers
(RR=0.79, 95% CI: 0.65-0.97)

(Vlaeyen et al. 2015)

• Conclusion new meta-analysis

(priori subgroep analyses)

– Unifactorial: no effect

- CAVE: training & education: 29% ↑ falls
(RR=1.29, 95% CI: 1.23-1.36)

– Multiple: no effect

– Multifactorial MD-team:

- 33% ↓ falls
(RR=0.67, 95% CI: 0.55-0.82)
- 21% ↓ recurrent fallers
(RR=0.79, 95% CI: 0.65-0.97)
- No effect on number of fallers
(RR=0.83, 95% CI: 0.68-1.01)

(Vlaeyen et al. 2015)

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Samen voor
valpreventie

FAQ

www.valpreventie.be

Expertisecentrum Val- en fractuurpreventie Vlaanderen

Vaak zijn ouderen zich nog te weinig bewust dat het voorkomen van valincidenten mogelijk is. Gedachten zoals "ik ben te oud geworden", "er is niets meer aan te doen" of "vallen overkomt mij niet" belemmeren dikwijls dat ouderen iets aan hun valrisico (laten) doen.



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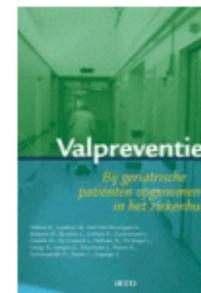
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Goal

- Provide an overview of available scientific evidence, supplemented with clinical expertise
- Guideline that can help detect, evaluate, treat and prevent falls

Overview

- Community (Milisen et al., 2017)
- Nursing homes (Milisen et al., 2012)
- Hospitals (Milisen et al., 2009)





Fall prevention = multidisciplinary



GP



Physiotherapist



Nurse



Occupational therapist



Other disciplines

Practice guideline: nursing homes



Fall prevention = multidisciplinary



GP



Physiotherapist



Nurse



Occupational therapist



Nurses aids



Other disciplines

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Take home...

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Conclusion

- Fall incidents are a significant threat to older people's health: prevention is needed
- Methods / materials are available (e.g. EVV guidelines) www.valpreventie.be
- Effective strategies? Multifactorial!
- Multidisciplinary collaboration & teamwork
- Questions? Ellen.vlaeyen@kuleuven.be