

# **Brudd i øvre femurende**

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# Disposisjon

- Kven er hoftebruddpatientane?
- Korleis går det med dei?
- Korleis bør dei behandlast?
- Vårt prosjekt

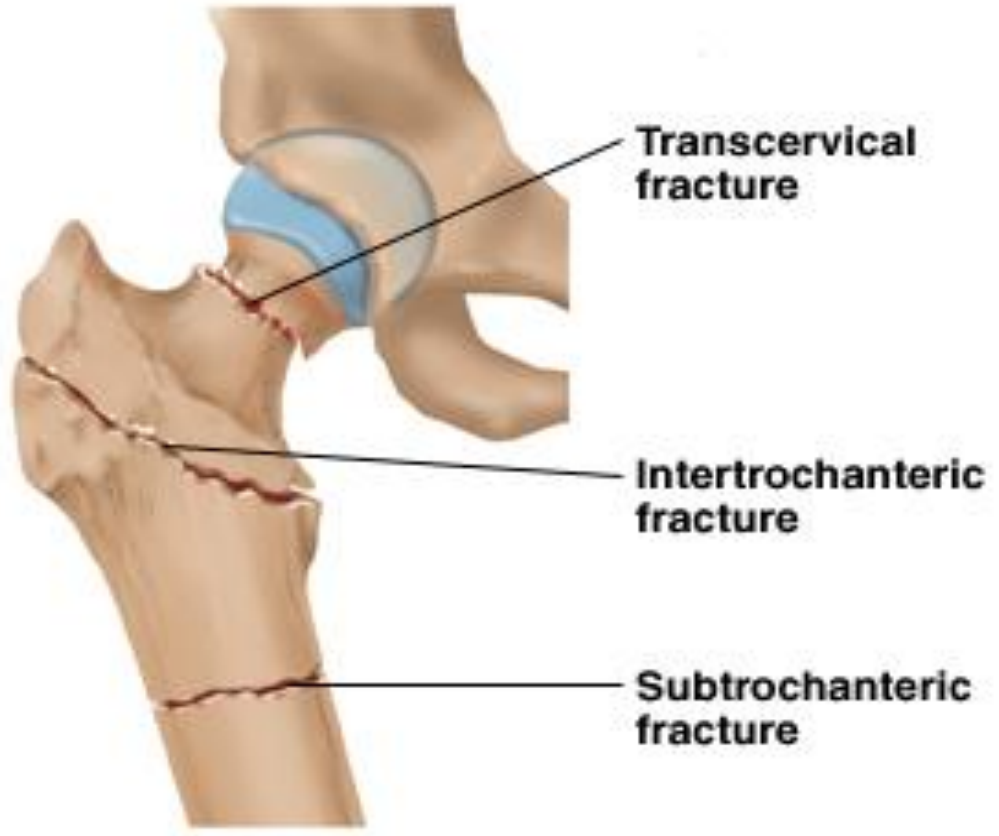


# For å vekke interessen....

- Hoftebrudd er ein dramatisk hendelse som har høg dødelighet og fører til kraftig reduksjon i funksjonsnivå.
- Norge har flest hoftebrudd i verden!
- Det kjem til å bli fleire hoftebruddspasientar i tida framover

# Disposisjon

- **Kven er hoftebruddpasientane?**
- Korleis går det med dei?
- Korleis bør dei behandlast?



# The Norwegian Hip Fracture Register

Experiences after the first 2 years and 15,576 reported operations

Fracture type	n	Age mean (95% CI)	Female %	Cognitive impairment % (yes / no / uncertain)	ASA mean (95% CI)
Undisplaced femoral neck (Garden 1 + 2)	2,452	79 (78–79)	69	20 / 68 / 12	2.5 (2.4–2.5)
Displaced femoral neck (Garden 3 + 4)	5,051	81 (80–81)	73	24 / 63 / 13	2.6 (2.6–2.7)
Basocervical	612	79 (78–80)	63	21 / 69 / 10	2.6 (2.5–2.7)
Femoral neck, unspecified <sup>d</sup>	244	71 (70–73)	74		2.6 (2.4–2.9)
Trochanteric, 2-fragment <sup>c</sup>	2,292	82 (81–82)	72	24 / 63 / 13	2.6 (2.5–2.6)
Trochanteric, multifragment <sup>c</sup>	1,738	82 (81–82)	74	25 / 62 / 13	2.6 (2.6–2.7)
Trochanteric, unspecified <sup>d</sup>	27	76 (71–80)	59		2.3 (2.0–2.6)
Subtrochanteric	713	78 (77–79)	73	18 / 69 / 13	2.5 (2.5–2.6)
Others or combined fractures	103	75 (71–79)	69	18 / 70 / 12	2.6 (2.3–2.9)
Unknown	19	83 (79–88)	84	21 / 42 / 37	3.4 (2.4–4.4)
All fractures	13,251	80 (80–80)	72	24 / 63 / 12	2.6 (2.6–2.6)
p-values		< 0.001 <sup>a</sup>	< 0.001 <sup>b</sup>	< 0.001 <sup>b</sup>	< 0.001 <sup>a</sup>

<sup>a</sup> ANOVA.

<sup>b</sup> Pearson chi-square test.

<sup>c</sup> Including intertrochanteric fractures.

<sup>d</sup> Patients reported to the Norwegian Arthroplasty Register.

# Epidemiology of Hip Fractures in Oslo, Norway

C. M. LOFTHUS,<sup>1</sup> E. K. OSNES,<sup>2</sup> J. A. FALCH,<sup>1</sup> T. S. KAASTAD,<sup>2</sup> I. S. KRISTIANSEN,<sup>3</sup>  
L. NORDSLETTEN,<sup>2</sup> I. STENSVOLD,<sup>4</sup> and H. E. MEYER<sup>5</sup>

Table 2. Age-adjusted rates (per 10,000 observation years) of hip fractures standardized to the population of Oslo in 1997<sup>a</sup>

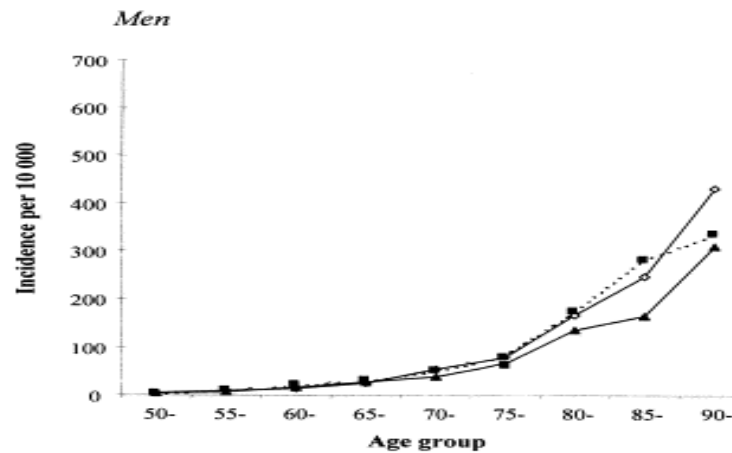
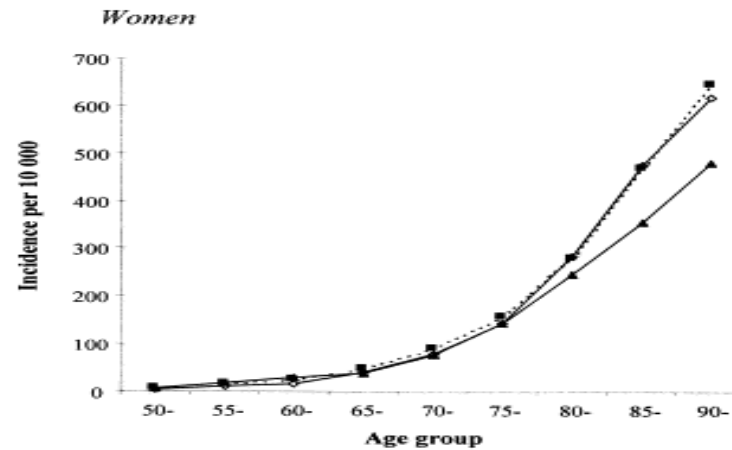
Geographical area	Year(s) of study	Age-adjusted rates		F/M ratio
		Female	Male	
Oslo, Norway	1996/97	192.0	85.5	2.2
Oslo, Norway (summer incidence) <sup>b</sup>	1996/97	188.1	80.5	2.3
Copenhagen, Denmark <sup>7</sup>	1989	174.2	91.3	1.9
Gothenburg, Sweden <sup>7</sup>	1989	174.1	86.5	2.0
USA (whites) <sup>12</sup>	1988–89	113.8	40.8	2.8
Vaud, Switzerland <sup>14</sup>	1991	112.0	36.6	3.1
Tampere, Finland <sup>7</sup>	1989	109.1	41.4	2.6
Wessex, England <sup>23</sup>	1993–95	81.4	27.2	3.0
Tottori, Japan <sup>11</sup>	1994	62.8	21.7	2.9
Beijing, China <sup>35</sup>	1990–92	15.0	14.5	1.0

<sup>a</sup>Calculations based on gender- and age-specific incidence rates in 5 year age groups from 65 to >85 years. Data abstracted from articles with sufficient details for calculation.

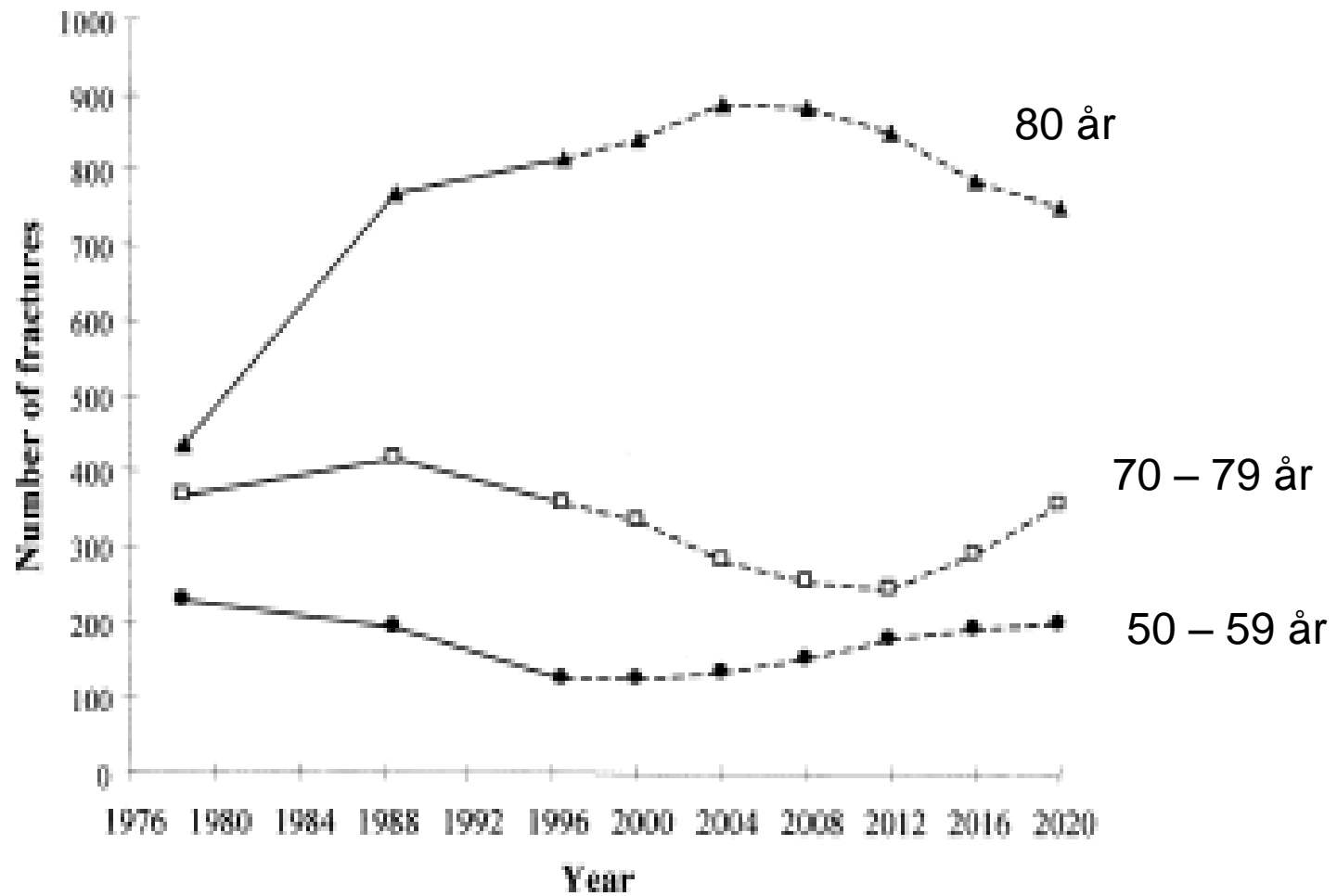
<sup>b</sup>Annual incidence based on the number of fractures in the period from April through September.

*Lofthus. Bone. 2001 Nov;29(5):413-8*

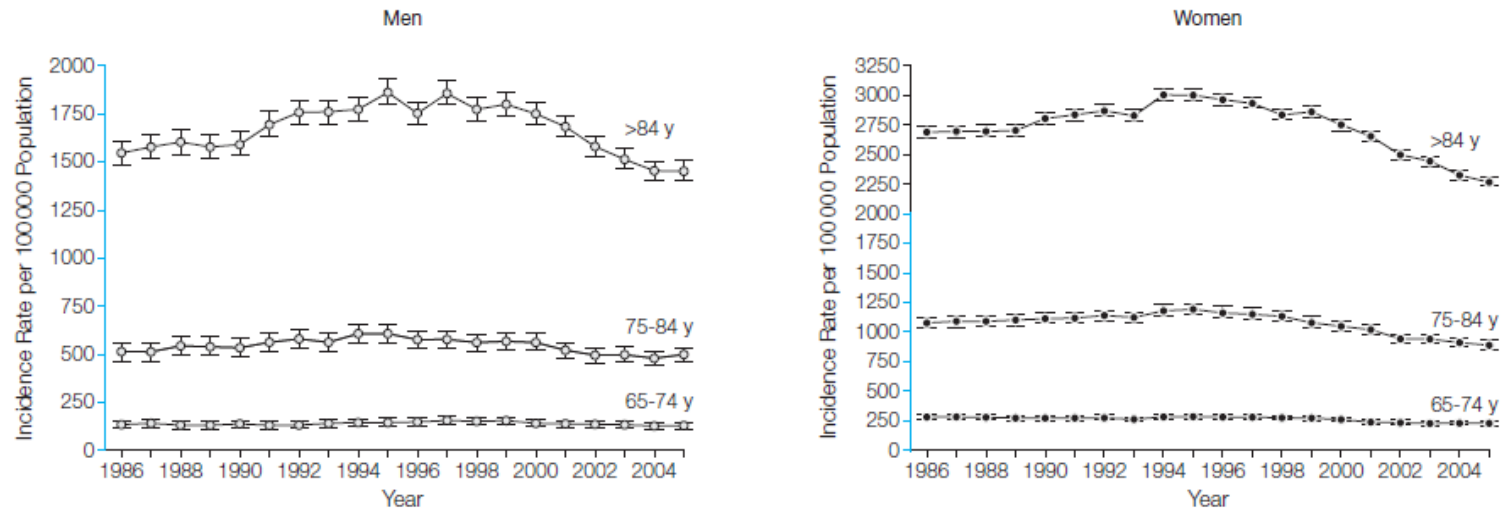
# Epidemiology of Hip Fractures in Oslo, Norway, Lofthus. Bone. 2001 Nov;29(5):413-8



*Lofthus. Bone. 2001 Nov;29(5):413-8*

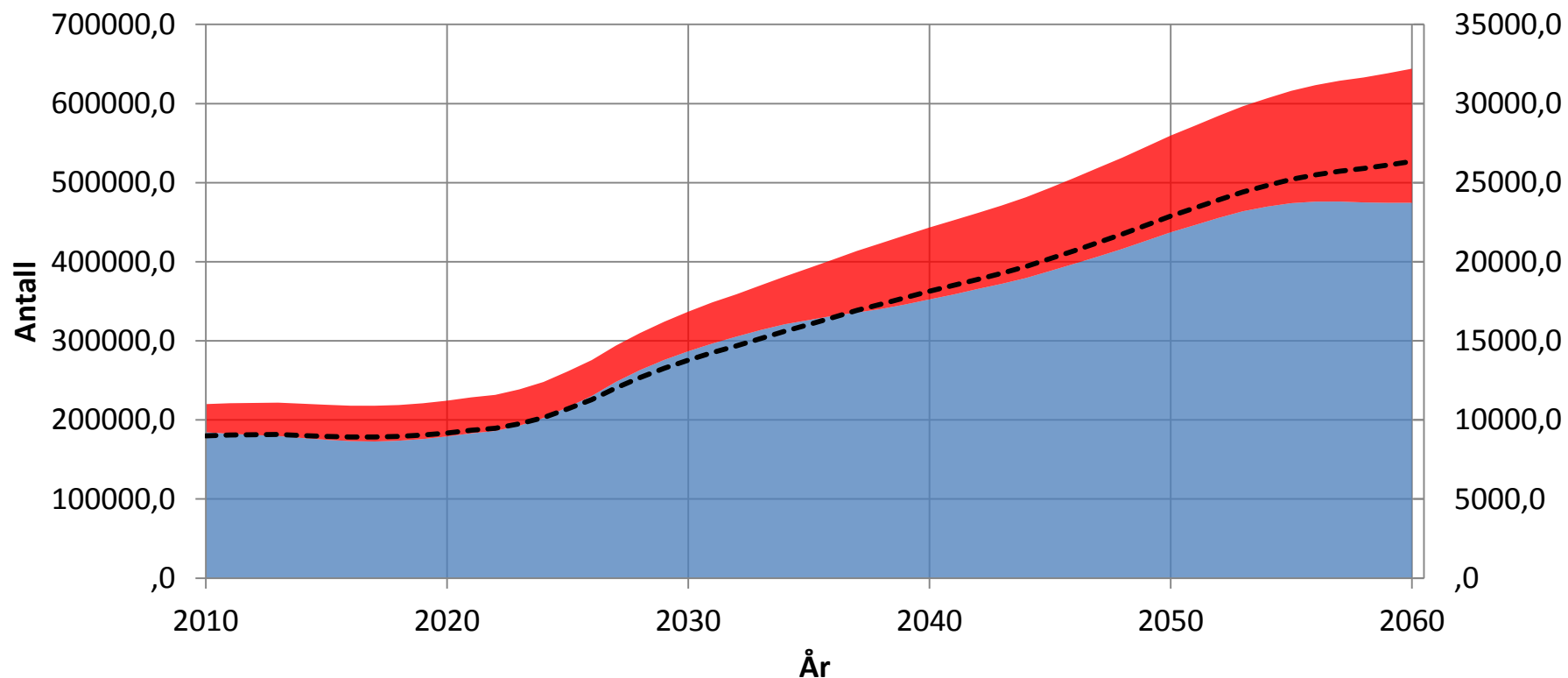


**Figure 2.** Temporal Trends in Hip Fracture Incidence by Age for Men and Women



Data are based on a 20% sample of Medicare claims; error bars indicate 95% confidence intervals. Regions of y-axes that are in blue indicate an incidence rate of 0 to 2000 per 100 000 population.

## Framskrevet folkemengde over 80 år



■ 80-89 år (venstre akse)

■ 90 år og eldre (venstre akse)

--- Ant. hoftebrudd (høyre akse)

# Older hip fracture patients: three groups with different needs

Anette H Ranhoff<sup>1\*</sup>, Kristin Holvik<sup>2</sup>, Mette I Martinsen<sup>2</sup>, Kirsti Domaas<sup>2</sup>, Ludvig F Solheim<sup>2</sup>

- Registrerte alle pasienter over 65 år som ble innlagt med hoftebrudd på ortogeriatrisk avdeling ved Diakonhjemmet januar 2007 – september 2009.
- 1010 pasienter, inkludert 241 frå sjukeheim

*Ranhoff; BMC Geriatrics 2010; 10: 65*

**Table 2 Characteristics of hip fracture patients 65 years and older admitted to an orthogeriatric unit January 2007 - September 2009 (n = 1010)**

Number (%) if not otherwise stated	
Age, years (mean (SD))	85.0 (7.1)
Gender, women	763 (75.5)
Nursing home residents	234 (23.2)
Indoor fall	838 (83.0)
American Society of Anesthesiologists (ASA) score, n = 1009:	
I - Healthy	10 (1.0)
II - Mild systemic disease	468 (46.4)
III - Severe systemic disease	505 (50.0)
IV - Incapacitating/life-threatening systemic disease	26 (2.6)
V - Moribund	0
Type of fracture	
- Fractur neck of femur	558 (55.2)
- Pertrochanteric fracture	391 (38.7)
- Subtrochanteric fracture	61 (6.0)

**Table 3 Characteristics of community-dwelling patients**

Characteristic	All community-dwelling (n = 769)
Age, years, mean (range)	84.3 (65-100)
Gender, n (%) female	584 (75.9)
ASA score, n (%) $\geq 3$	368 (47.9)
BMI, n (%) $< 20 \text{ kg/m}^2$ (n = 520) <sup>1</sup>	129 (24.8)
Barthel Index pre-fracture $< 19$ , n (%) (n = 493) <sup>2</sup>	203 (41.2)
Barthel Index at discharge $< 19$ , n (%) (n = 316) <sup>3</sup>	265 (83.9)
IQCODE-SF $> 3.6$ , n (%) (n = 511) <sup>4</sup>	192 (37.6)
<b>Chronic medical disorders (from patient's records), n (%)</b>	
Dementia	160 (20.8)
Pulmonary disease	107 (13.9)
Major vision impairment	81 (10.5)
Major hearing impairment	73 (9.5)
Musculoskeletal disorder	70 (9.1)
Endocrine disorder (other than diabetes)	67 (8.7)
Diabetes mellitus	60 (7.8)
Cerebrovascular disease	56 (7.3)
Psychiatric disorder	54 (7.0)
Osteoporosis with previous fracture	51 (6.6)
Neurologic disorder	44 (5.7)
Cancer	42 (5.5)
Renal failure	22 (2.9)

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# Incidence and Mortality of Hip Fractures in the United States

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Carmen A. Brauer, MD, MSc, FRCSC

Marcelo Coca-Perraillon, MA

David M. Cutler, PhD

Allison B. Rosen, MD, MPH, ScD

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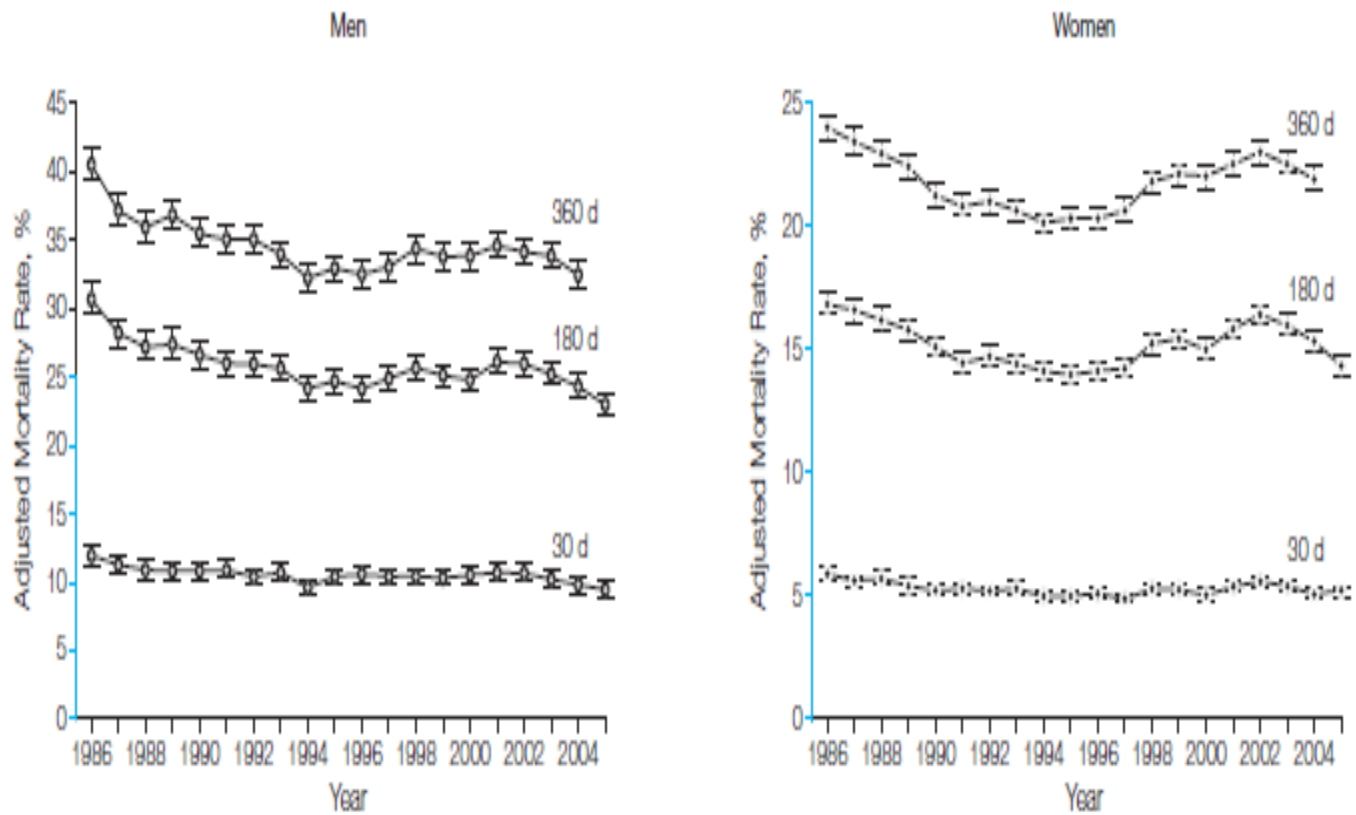
**Context** Understanding the incidence and subsequent mortality following hip fracture is essential to measuring population health and the value of improvements in health care.

**Objective** To examine trends in hip fracture incidence and resulting mortality over 20 years in the US Medicare population.

- Dødeligheten har blitt redusert dei siste åra, men er framleis høg.
- 1 års dødelighet ligger mellom 20 – 30 %. Kvinner har lavare dødelighet enn menn.

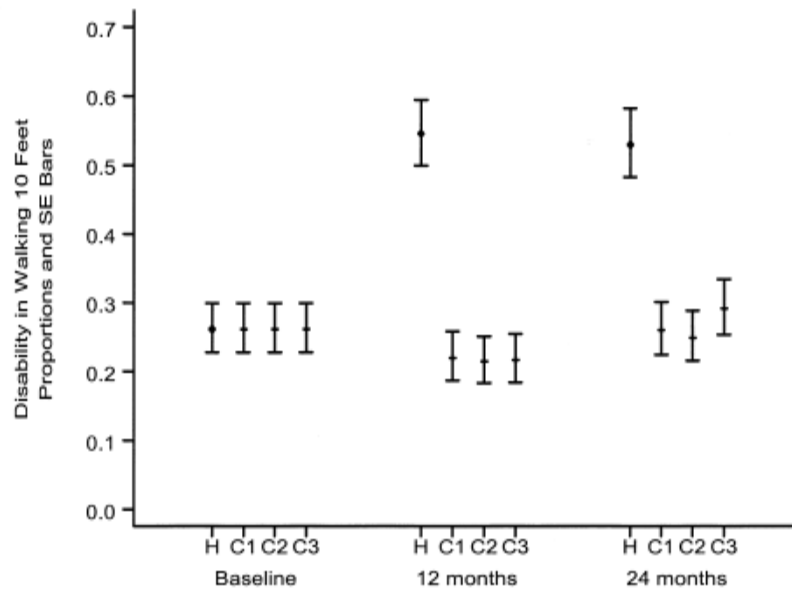
*Brauer CA. JAMA 2009;302*

**Figure 3.** Trends in Risk-Adjusted Mortality at 30, 180, and 360 Days



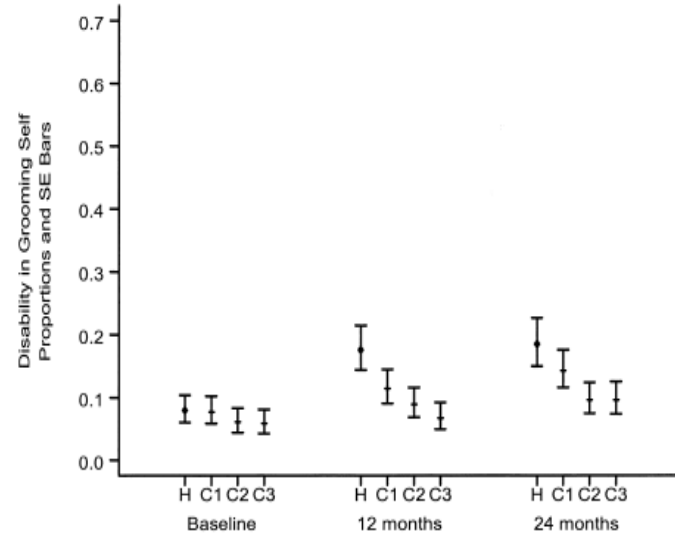
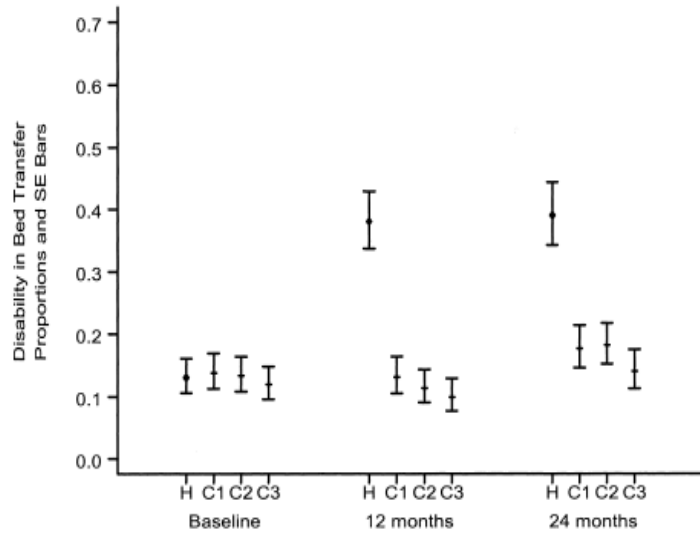
*Brauer CA. JAMA 2009;302*

## Changes in Functional Status Attributable to Hip Fracture: A Comparison of Hip Fracture Patients to Community-dwelling Aged



**FIGURE 1.** Proportions of participants disabled regarding the activities of daily living task walk 10 feet (3 m) in the hip fracture (H) versus three Established Populations for Epidemiologic Studies of the Elderly control samples (C1, East Boston, Massachusetts; C2, Iowa; C3, New Haven, Connecticut). SE, standard error.

*Magaziner, J.*  
*Am Journal Epidemiol 2003; 157:1023*



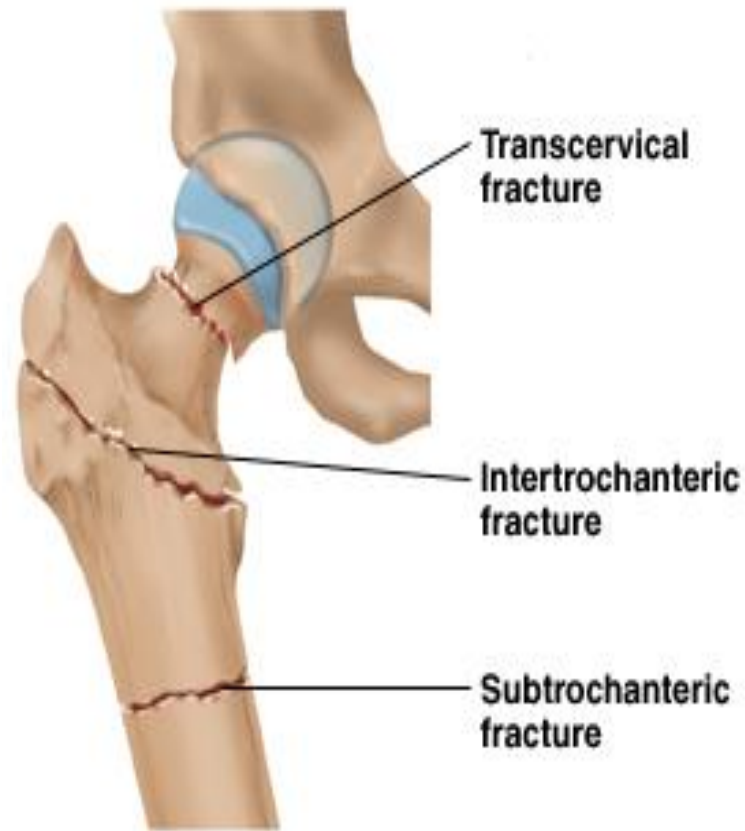
*Magaziner, J.  
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# Korleis behandle?

- Dei aller fleste skal opererast.
- Operasjonsmetode avhenger av kva type brudd.
- Litt diskusjon i ortopediske miljø kva operasjonsmetode som er best.

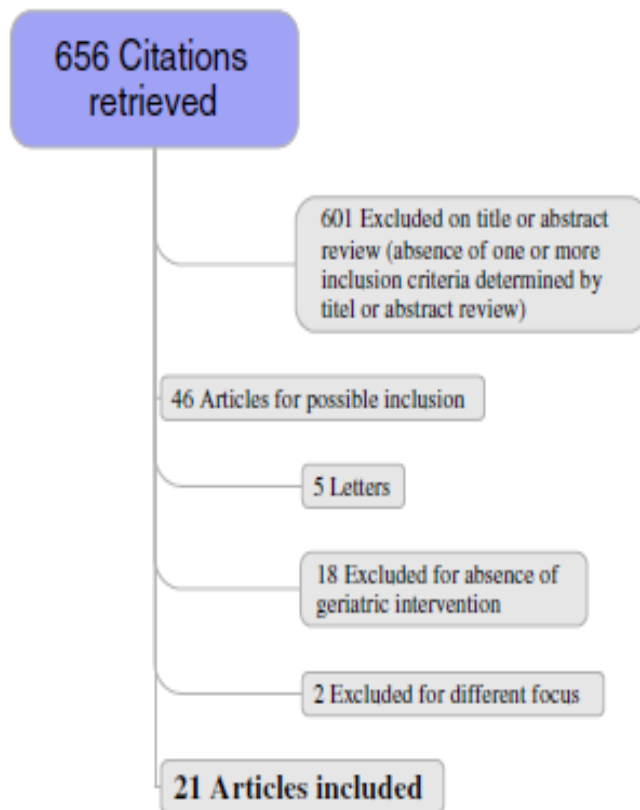


# Men operasjon er ikkje nok....

- Vi har sett at hoftebruddpasientane er:
  - gamle
  - skrøpelige
  - kognitivt svekka
  - har mange kroniske sjukdomar
- Er dette egentleg ortopedens sin draumepasient?
- Men for ein geriater er jo dette midt i blinken!
- Løysinga: "Orto-geriatri"!

## Ortho-geriatric service—a literature review comparing different models

C. Kammerlander · T. Roth · S. M. Friedman ·



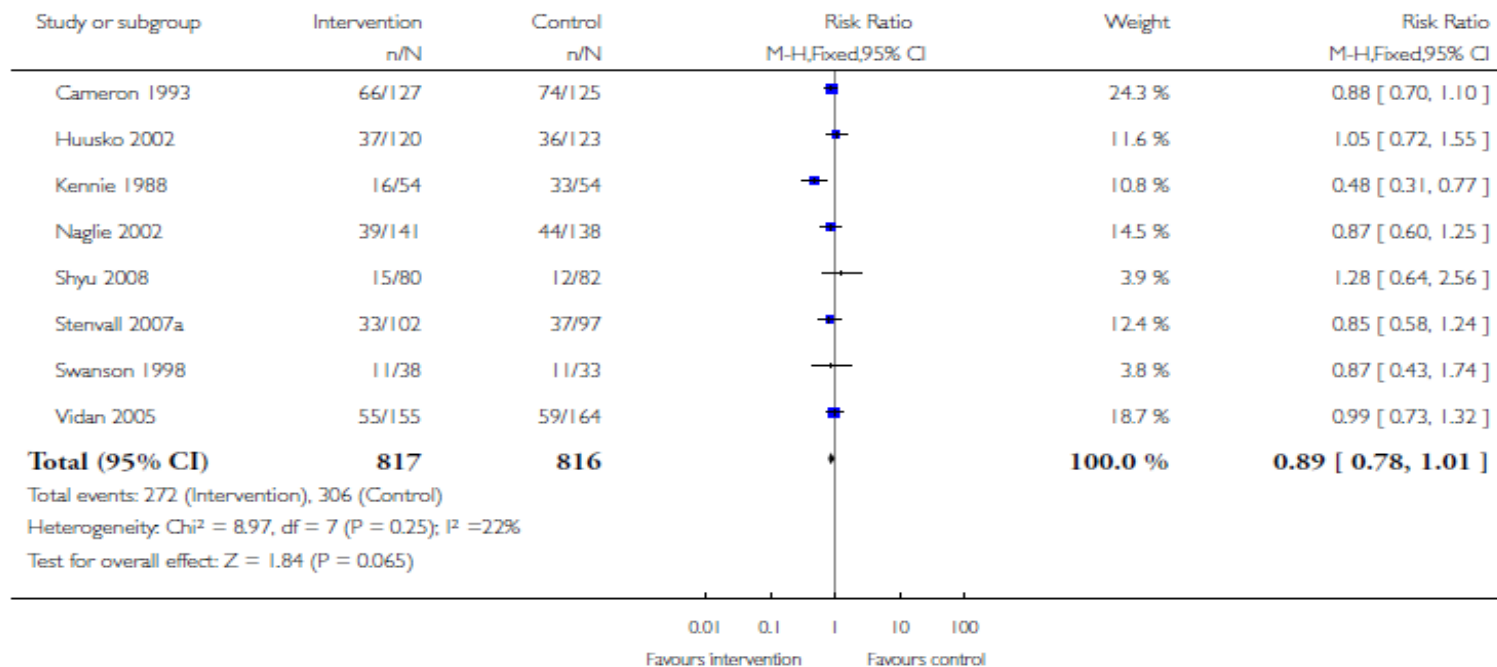
1. Orthopedic ward and geriatric consultant service. (2 studier)
2. Orthopedic ward and daily consultative service. (8 studier)
3. Geriatric and rehabilitation ward and orthopedic consultant service. (5 studier)
4. Orthopedic ward and integrated care. (6 studier)

**Analysis 1.1. Comparison 1 Multidisciplinary inpatient rehabilitation versus usual care, Outcome 1 'Poor outcome' (long-term follow-up).**

Review: Multidisciplinary rehabilitation for older people with hip fractures

Comparison: 1 Multidisciplinary inpatient rehabilitation versus usual care

Outcome: 1 'Poor outcome' (long-term follow-up)



- *“Pooled results showed no statistically significant difference between intervention and control groups.”*
- *“Overall, the results of this review suggest that multidisciplinary rehabilitation may help more older people recover after a hip fracture. However, the results are not conclusive and more research is needed.”*

# Vår studie

- Samarbeid med ortopedisk avdeling
- Oppstart inklusjon i september 2009
- Mål inkludere 360 pasientar innan desember 2011



## Inclusion and randomization

Patients are included and randomized in the emergency department by the orthopaedic surgeon on call.

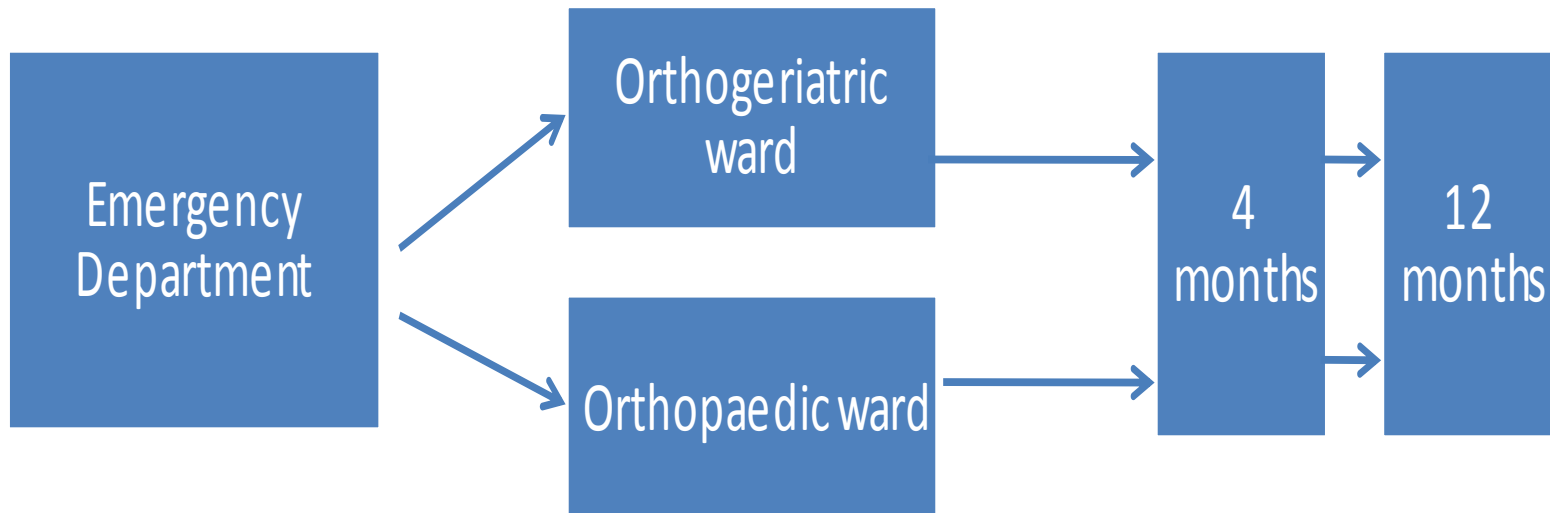
## Intervention

Patients are screened daily for delirium. Background information is collected while patients are admitted

## Assessment

After 4 and 12 months the patient will be assessed by a specially trained research assistant blinded to allocation.

Primary endpoint: Cognitive function



# Status

- 206 pasienter inkludert
- 4 og 12 mnd kontroll er godt i gang, og vi får testa dei aller fleste som er i live.

# Konklusjon

- Hoftebruddpasienter er gamle og skrøpelige
- Dei har tilstander som krever tverrfagleg handtering
- Det vil bli fleire av dei i framtida