4° CONGRESSO NAZIONALE FRAGILITY FRACTURE NETWORK - ITALIA

Appropriatezza, Qualità e Sostenibilità delle Cure nel Percorso Ortogeriatrico

V Sessione: L'approccio riabilitativo integrato

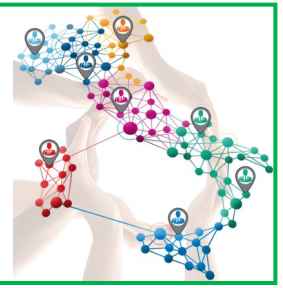
Gli esiti funzionali a breve termine: quali scale e quali indicatori

Stefano Masiero

Cattedra di Medicina Fisica e Riabilitativa - Dipartimento di Neurocienze, Università di Padova

U.O.C. Riabilitazione Ortopedica – Neuroriabilitazione
Azienda Ospedale Università Padova

L’anziano con frattura di femore (contesto)



La persona anziana (contesto fisico)

- Ridotta riserva funzionale
- Possibili comorbidità in politerapia farmacologica
- Possibile iniziale perdita di autonomia nelle ADL

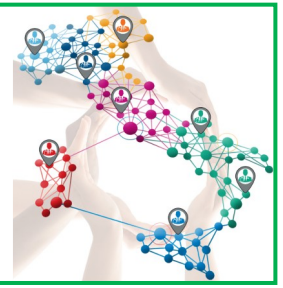
Contesto
Ambientale e
Organizzativo

L’evento traumatico non riguarda solo il sistema osteo-muscolo-articolare ma intacca l’equilibrio dell’intero organismo e si inserisce in sistema socio-ambientale non sempre ottimale

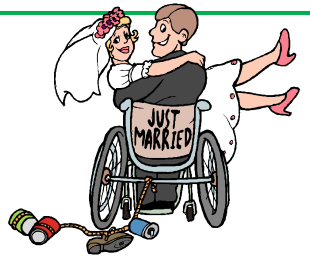
Come definire gli esiti funzionali?

Non esiste un *core set condiviso* per valutare gli esiti funzionali dei pazienti con fratture di femore

Come definire gli esiti funzionali (in riabilitazione)?

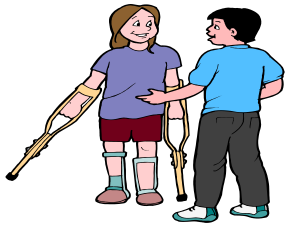


- **Outcome globale o generale:** risultato di tutti gli interventi sanitari della medicina riabilitativa e degli interventi della riabilitazione sociale → contribuisce a determinare la qualità della vita della persona.

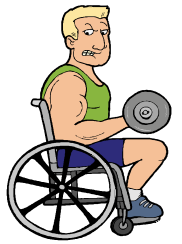


- **Outcome funzionale:** risultato finale desiderato relativo a uno specifico set di parametri *(per esempio, la completa autonomia al proprio domicilio)*

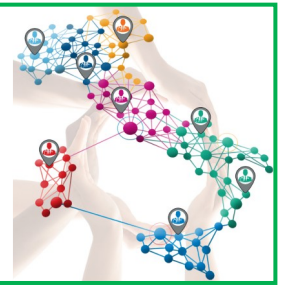
- **Outcome specifico:** risultato desiderato relativo ad un set di parametri minori o più discreti (*ad esempio: l'autonomia deambulatoria*)



- **Outcome sociale:** risultato finale degli interventi della riabilitazione sociale.



Come definire gli esiti funzionali?



Age and Ageing 2018; **47:** 661–670
doi: 10.1093/ageing/afy057
Published electronically 12 April 2018

Prognostic factors of functional outcome after hip fracture surgery: a systematic review

K. J. Sheehan[1], L. Williamson[1], J. Alexander[1], C. Filliter[2], B. Sobolev[3], P. Guy[4], L. M. Bearne[1], C. Sackley[1]

Methodologic problems: Functional recovery in elderly hip fracture patients has been measured very heterogeneously

- No standard definition used for functional capacity, and there is the use of words like “functionality,” “physical function,” and “functional status” as synonyms
- The evidence does not contemplate the measurement methods of functional capacity in the interpretation of the results
- There is no consensus on the content and execution of the outcomes measured.

→ **This situation has not contributed to the production of solid evidence in this area**

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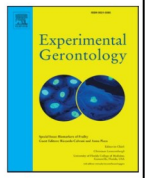
journal homepage: www.elsevier.com/locate/expgero



Review

Independent factors associated with long-term functional outcomes in patients with a proximal femoral fracture: A systematic review

Max P.L. van der Sijp[a,*], Monica van Eijk[a], Wing H. Tong[a], Arthur H.P. Niggebrugge[b], Jan W. Schoones[c], Gerard J. Blauw[d], Wilco P. Achterberg[a]

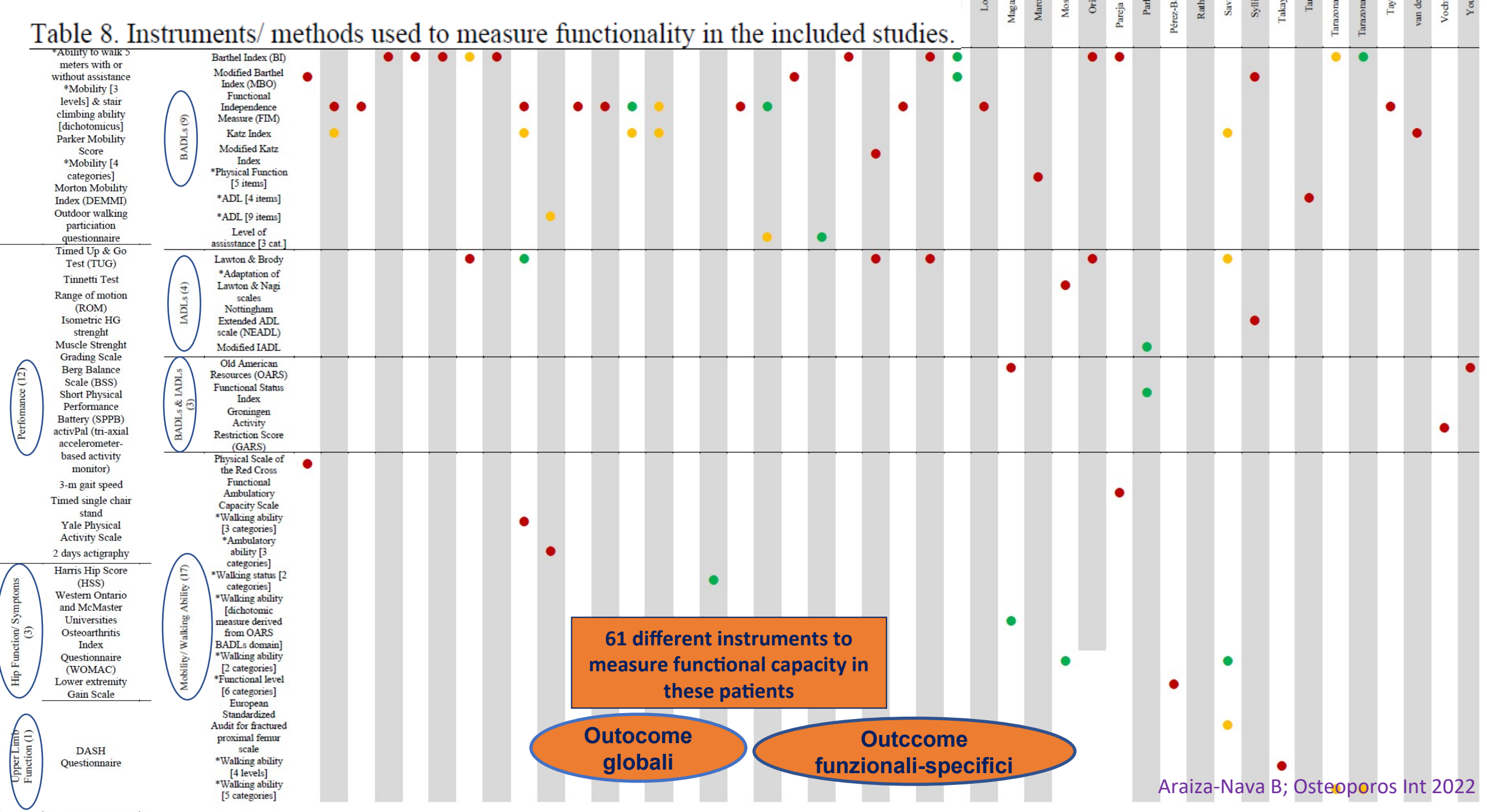
Osteoporosis International (2019) 30:929–938
https://doi.org/10.1007/s00198-018-04831-5

REVIEW ARTICLE

Pre-discharge prognostic factors of physical function among older adults with hip fracture surgery: a systematic review

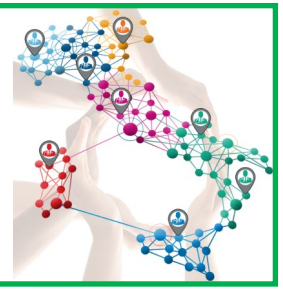
K. K. Lim[1] · D. B. Matchar[1,2] · J. L. Chong[1] · W. Yeo[3] · T. S. Howe[4,5] · J. S. B. Koh[4,5]

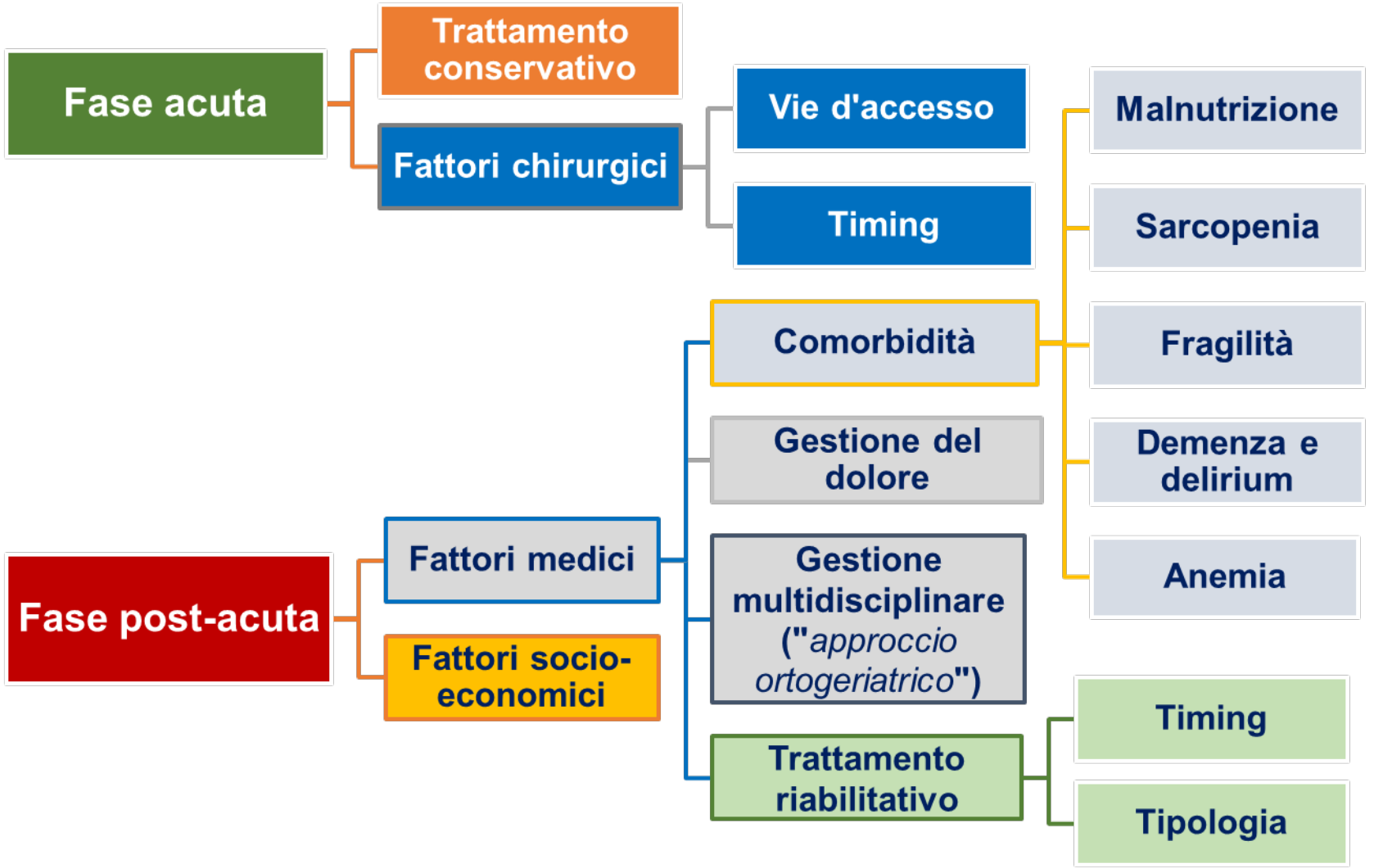
Table 8. Instruments/ methods used to measure functionality in the included studies.



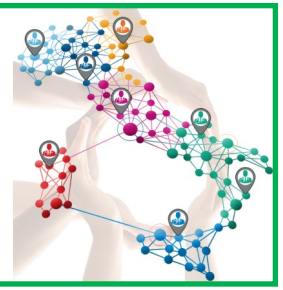
*All these measures of function were created/ adapted by the authors. **ABBREVIATIONS:** ADL: Activities of Daily Living; BADLs: Basic Activities of Daily Living; IADLs: Instrumental Activities of Daily Living. **SYMBOLS**: Green circles indicate that the instrument was used only as outcome measure, Yellow circles indicate that the instrument was used only as an independent or prognostic variable, and Red circles indicate that the instrument was used as an outcome and a prognostic variable.

I predittori di esito a breve termine?





Gestione in fase acuta: fattori chirurgici come indicatori di esito funzionale-specifico



Trattamento non chirurgico: aumento della mortalità a 1 anno (mortalità 67-70 %)

Trattamento chirurgico (gold standard)

TIPOLOGIA

- ***Approccio anteriore diretto (AD) ha dimostrato:***
  - durata della degenza più breve rispetto all'approccio posterolaterale (2,3 vs 2,7 giorni)
  - più precoce dimissioni a casa (79% vs 68,7%) (< LOS)
  - **Harris Hip Score migliore alle valutazioni precoci (risultati significativamente migliori al ai follow-up a 3 e 6 mesi (> walking)**

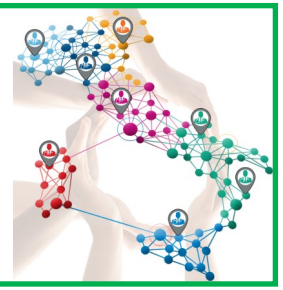
Item (Harris Hip Score)	Score
Pain	44
Function	47
Range of Motion	5
Deformity	4
Total	**100**

TIMING

- ***Se intervento eseguito prima di 48h dall'accesso del paziente:***
  - minore frequenza di complicanze perioperatorie
  - minore mortalità (aumento del 12% della mortalità a 1 anno per ogni giorno di ritardo)
  - **aumento della probabilità di recupero della deambulazione durante la degenza e di ritorno a domicilio entro 3 mesi**

Khan IA et al. JBJS Rev 2022
Aprato A. et al. J Orth Traum 2019
Sibia et al. J Arthroplasthy 2017

Gestione in fase post-acuta: aspetti medico-riabilitativi e preventivi come indicatori di esito globale



Indicatori utilizzati come misura della qualità dell'assistenza post-acuta:

- Gestione del **dolore** (su scala analogica o numerica)
- **Mobilizzazione entro 24 ore** dall'intervento
- **Programma di riabilitazione** post-ricovero personalizzato
- **Programma di prevenzione** di future cadute

Per tutti gli indicatori associazione significativa con minore mortalità a 30 giorni, < rischio di riammissione in ospedale e minore durata della degenza in acuto/riabilitazione (LOS)

Backman C, et al.. BMJ Open 2022; Kristensen PK et al. Int J Qual Health Care 2016
Kristensen PK et al. Osteoporos Int. 2016

Riabilitazione come indicatore di esito funzionale-specifico

Carico precoce e riabilitazione precoce sono correlati a migliori outcome funzionali:

- **> 48h prima della mobilizzazione è predittore di maggiori complicanze intraospedaliere**
- **Devono essere preferiti:**
  - *Resistance training*
  - Training specifico nelle ADL
  - Training equilibrio

> SICOT J. 2019;5:4. doi: 10.1051/sicotj/2019005. Epub 2019 Feb 28.

Influence of mobilization and weight bearing on in-hospital outcome in geriatric patients with hip fractures

Manuel Baer [1], Valentin Neuhaus [1], Hans Christoph Pape [1], Bernhard Ciritsis [1]

> J Gerontol A Biol Sci Med Sci. 2021 Aug 13;glab236. doi: 10.1093/gerona/glab236. Online ahead of print.

Exercise therapy is effective at improving short- and long-term mobility, ADL and balance in older patients following hip fracture: a systematic review and meta-analysis

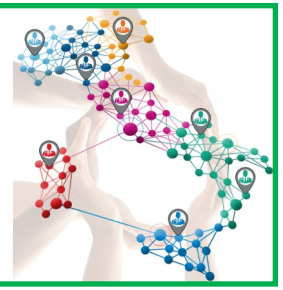
Signe Hulsbæk [1], Carsten Juhl [2 3], Alice Røpke [2], Thomas Bandholm [1 4 5 6], Morten Tange Kristensen [1 4 6]

Review > Phys Ther. 2012 Nov;92(11):1437-51. doi: 10.2522/ptj.20110274. Epub 2012 Jul 19.

Extended exercise rehabilitation after hip fracture improves patients' physical function: a systematic review and meta-analysis

Mohammad A Auais [1], Owis Eilayyan, Nancy E Mayo

La gestione post-acuta: il ruolo delle comorbidità e del dolore come indicatori di esito funzionale e globale



Review > Nutrients. 2020 Dec 4;12(12):3743. doi: 10.3390/nu12123743.

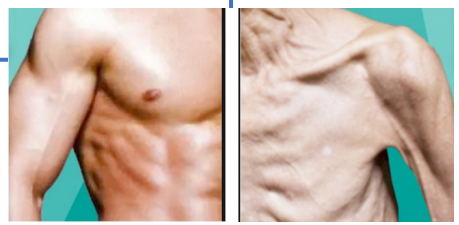
Undernutrition, Sarcopenia, and Frailty in Fragility Hip Fracture: Advanced Strategies for Improving Clinical Outcomes

Tatsuro Inoue [1], Keisuke Maeda [2 3], Ayano Nagano [4], Akio Shimizu [5], Junko Ueshima [6], Kenta Murotani [7], Keisuke Sato [8], Atsuhiro Tsubaki [1]

Predittori di ridotto outcome funzionale

(Barthel Index, Functional Independence Measure, Harris Hip Scor, etc)

- Cattivo stato funzionale pre-frattura
- Comorbidità multiple
- Sarcopenia & e hand grip strength
- Malnutrizione
- Fragilità



Case Reports > J Clin Nurs. 2009 Mar;18(5):755-64. doi: 10.1111/j.1365-2702.2008.02611.x.

Postoperative pain and its impact on quality of life for hip-fractured older people over 12 months after hospital discharge

Yea-Ing Lotus Shyu [1], Mei-Ling Ch

Comparative Study > Pain. 2003 Jun;103(3):303-311. doi: 10.1016/S0304-3959(02)00458-X.

The impact of post-operative pain on outcomes following hip fracture

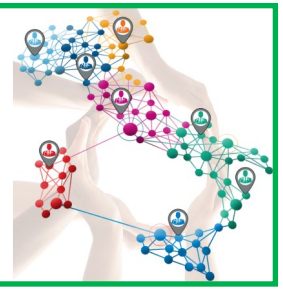
Sean R Morrison [1], Jay Magaziner, Mary Ann McLaughlin, Gretchen Orosz, Stacey B Silberzweig, Kenneth J Koval, Albert L Siu

Associazione tra dolore postoperatorio ed esiti precoci

Pazienti con punteggi di dolore (NRS) più elevati:

- degenza ospedaliera più lunga
- maggior tempo per ripresa della deambulazione
- minore funzionalità a 3 e 6 mesi

La gestione post-acuta: stato cognitivo come indicatore di esito globale e funzionale



Clinical Interventions in Aging

Dovepress
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ORIGINAL RESEARCH

Dementia and delirium, the outcomes in elderly hip fracture patients

This article was published in the following Dove Press journal:
Clinical Interventions in Aging
10 March 2017
Number of times this article has been viewed

Christina A Mosk[1]
Marnix Mus[1]
Jos PAM Vroemen[1]
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Leon HGJ Elmans[3]
Lijckle van der Laan[1]

[1]Department of Surgery, Amphia Hospital, Breda, [2]Department of Public Health, Erasmus MC–University Medical Center, Rotterdam, [3]Department of Orthopedic Surgery, Amphia Hospital, Breda, the Netherlands

Background: Delirium in hip fractured patients is a frequent complication. Dementia is an important risk factor for delirium and is common in frail elderly. This study aimed to extend the previous knowledge on risk factors for delirium and the consequences. Special attention was given to patients with dementia and delirium.

Methods: This is a retrospective cohort study performed in the Amphia Hospital, Breda, the Netherlands. A full electronic patient file system (Hyperspace Version IU4: Epic, Inc., Verona, WI, USA) was used to assess data between January 2014 and September 2015. All patients presented were aged ≥70 years with a hip fracture, who underwent surgery with osteosynthesis or arthroplasty. Patients were excluded in case of a pathological or a periprosthetic hip fracture, multiple traumatic injuries, and high-energy trauma. Patient and surgical characteristics were documented. Postoperative outcomes were noted. Delirium was screened using Delirium Observation Screening Scale and dementia was assessed from medical notes.

Results: Of a total of 566 included patients, 75% were females. The median age was 84 years (interquartile range: 9). Delirium was observed in 35%. Significant risk factors for delirium were a high American Society of Anesthesiology score, delirium in medical history, functional dependency, preoperative institutionalization, low hemoglobin level, and high amount of blood transfusion. Delirium was correlated with a longer hospital stay (P=0.001), increased association with complications (P<0.001), institutionalization (P<0.001), and 6-month mortality (P<0.001). Patients with dementia (N=168) had a higher delirium rate (57.7%, P<0.001) but a shorter hospital stay (P<0.001). There was no significant difference in the 6-month mortality between delirious patients with (34.0%) and without dementia (26.3%).

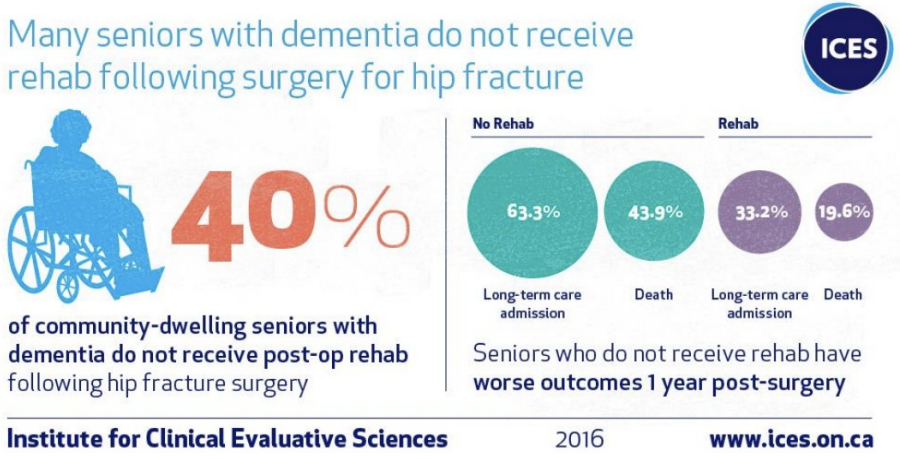
Conclusion: Elderly patients with a hip fracture are vulnerable for delirium, especially when the patient has dementia. Patients who underwent an episode of delirium were at increased risk for adverse outcomes.

Keywords: hip fracture, elderly, dementia, delirium, complications, adverse outcomes

Does cognitive performance affect physical therapy regimen after hip fracture surgery?

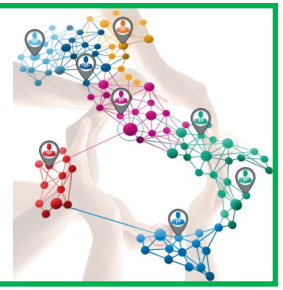
Giuseppe Bellelli[1], Giovanni B. Frisoni[2], Marco Pagani[1], Francesca Magnifico[1], and Marco Trabucchi[3]

[1]Rehabilitation and Aged Care Unit, RACU, Ancelle della Carità Hospital, Cremona, [2]Laboratory of Epidemiology and Neuroimaging - LENITEM, IRCCS San Giovanni di Dio - FBF, Brescia and AFaR - Associazione Fatebenefratelli per la Ricerca, Rome, [3]University Tor Vergata, Rome, and Geriatric Research Group, Brescia, Italy.



Frequentemente i pazienti con demenza non ricevono adeguato trattamento riabilitativo dopo l'intervento

La gestione post-acuta: anemia come indicatore di esito globale



Preoperative Anemia, Functional Outcomes, and Quality of Life After Hip Fracture Surgery

Yilin Eileen Sim, MBBS, MMed, Shao-en David Sim, MBChB,† Chusheng Seng, MBBS, FRCSEd (Ortho),† Tet Sen Howe, MBBS, FRCS,† Suang Bee Koh, MBBS, FRCSEd (Orth),† and Hairil Rizal Abdullah, MBBS, MMed**

CONCLUSION: Preoperative anemia (hemoglobin <10.0 g/dL) is associated with poorer physical function and HRQoL after hip fracture surgery. Perioperative blood transfusion and predischarge anemia had no effect. J Am Geriatr Soc 66:1524–1531, 2018.

OBJECTIVES: To determine whether preoperative anemia, perioperative blood transfusion, and predischarge anemia affect function and health-related quality of life (HRQoL) after hip fracture surgery.
DESIGN: Retrospective single-center cohort study
PARTICIPANTS: Individuals undergoing traumatic hip fracture surgery from 2012 to 2016 (N5973).
MEASUREMENTS: Demographic data, Charlson Comorbidity Index, preoperative hemoglobin level, perioperative blood transfusion, predischarge hemoglobin level, type of surgery (replacement or fixation). Anemia was divided into quintiles at 10.0, 11.0, 12.0, and 13.0 g/dL. Baseline, 6-week, and 6-month Harris Hip Scale (HHS), Parker Mobility Scale (PMS), and Medical Outcomes Study 36-item Short-Form Health Survey (SF-36) scores were obtained. PMS; HHS and SF-36 role physical (RP), physical function (PF), and social functioning (SF) domains had more than 20% change from baseline to 6 weeks and from 6 weeks to 6 months. Univariate and multivariate analyses were conducted to examine the association between preoperative anemia, transfusion and predischarge anemia on 6-month scores.
RESULTS: On univariate analysis, preoperative hemoglobin less than 10.0 g/dL was associated with lower baseline prefall PMS, PF, RP, and SF scores. Predischarge anemia did not affect 6-month scores. On multivariate analysis, preoperative anemia (hemoglobin <10.0 g/dL) was associated with lower 6-month HHS, PMS, PF, and RP scores, whereas transfusion was not significant.

Osteoporosis International (2022) 33:1429–1444
https://doi.org/10.1007/s00198-022-06346-6

REVIEW

Short- and long-term prognostic factors associated with functional recovery in elderly patients with hip fracture: A systematic review

Berenice Araiza-Nava[1] · Lucia Méndez-Sánchez[1] · Patricia Clark[1] · María Luisa Peralta-Pedrero[2] · Muhammad Kassim Javaid[3] · Mónica Calo[4] · Brenda María Martínez-Hernández[5] · Fabiola Guzmán-Jiménez[6]

43 studies

74 prognostic factors to functional recovery of elderly hip fracture patients (> non-modifiable, related to personal, sociodemographic, or inherent factors to the patients' basal characteristics, including their pre-facture functional capacity

61 different instruments to measure functional capacity in these patients

Functional outcomes in functional capacity was defined as a change in functional capacity, including at least one of these measures (five):

- Ability to perform basic activities of daily living (BADLs)(ex. Eating, toileting activities, etc.)
- Ability to perform instrumental activities of daily living (IADLs)(IADLs)(ex. use of transport, shopping, cooking, etc.),
- Ambulatory or walking ability (including measures of distance, speed or use of mobility aids),
- Mobility (defined here as the ability to move oneself within a wide range of community environments)

CONCLUSION

Most of the associated factors for functional recovery of elderly hip fracture were biological, sociodemographic, or inherent factors to patients' baseline characteristics, including their pre-facture functional capacity

Table 2 Description of the associated factors to functional recovery after hospital discharge in elderly patients (over 60 years) after a hip fracture event

TYPE OF FACTOR	ASSOCIATED FACTOR		IMPACT **		TIME	
					SHORT TERM (< 6 months)	LONG TERM (≥6 months)
Constitutional factors	Age	> 85	NM	-	●	●
		< 84		-		●
	Gender	Female		+		●
	Pre-fracture cognitive status	Impairment		-	●	●
	Cognitive status in acute phase/ admission	MMSE (low, < 24)	M	-	●	●
		SPMSQ score (0–10 errors)		-	●	
		2 or fewer errors		+		●
		Pfeiffer > 5		-	●	
		Absence		+		●
	Neuropsychiatric symptoms	Agitation		-	●	
		Irritability		-	●	
	Depressive symptoms	CES-D score (> 16)		-		●
		Initially high, then low		-		●
		Persistently low		-		●
	Comorbidities	One or more associated	NM	-		●
		Charlson Index score > 2	-	-		●
		CIRS severity		-	●	
		Hemiplegia		-		●
		Cerebrovascular disease		-	●	
		Presence of Osteoarthritis (OA)		-		●
		Grade of OA		-		●
		Sarcopenia		-		●
		Stroke		-	●	
	Bone Mineral Density	Higher T-Score		+		●
	Dementia	Severe		-	●	●
		Moderate		-	●	●
	Fragility	Clinical Frailty Scale (5, 6, 7)		-	●	
	Subjective memory complaints (SMCs)			●	●	
	Delirium	Post-surgical	M	-	●	●
	Disorientation	+ age > 85		-		●
	Type of Fracture	Femoral neck fracture	NM	+		●
	Surgical Risk	Higher ASA Classification		-	●	
	Biomarkers	Factor 4 (Aspartate/ Asparagine, C22, C5:1, Lactate (inverse), Glutamate/ mine (inverse))		+		●
		TNFR-I		+		●
		miR-376a-3p		+		●
		miR-16-5p		+		●
Individual life-style factors	Nutritional Status	MNA	M	+		●
		Caloric malnutrition		-		●
		Proteic malnutrition		-		●
	Albumin level	< 3.6 g/dL at admission		+	●	●
	Haemoglobin	> 11.4 d/dL at admission		+		●
	Vitamin D	Highest tertile		+	●	●
		Intermediate tertile		+	●	●
Social and community networks	Support network	Contact	NM	+		●
		Size <		-		●
Living and working conditions	Education level	Less than high school	NM	-		●
	Social situation before admission (residency)	Living alone		-		●
		Nursing home/ Institution		-	●	●
	Social situation at discharge (residency)	Nursing home/ Institution		-	●	●
		Hospitalization		-	●	

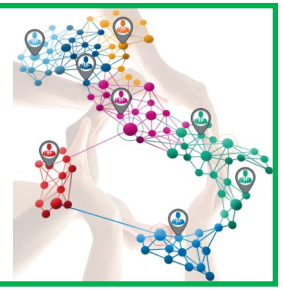
Table 2 (continued)

TYPE OF FACTOR	ASSOCIATED FACTOR		IMPACT **		TIME	
					SHORT TERM (< 6 months)	LONG TERM (≥6 months)
	Supplement treatment at discharge	Receive	M -	+	●	●
	Prescription drugs use	Number of drugs (>)		-	●	
	Antipsychotic drugs	Use		-	●	
	Femoral Offset	Rotation-corrected change		-		●
	Collum compression (cm)				●	
	Lenght of hospital stay	> 10 days		-	●	●
	Rehospitalization	After discharge		-	●	●
	Complications	Type II (*Clavien-Dindo classification)		-		●
	Major fall	After discharge		-		●
	Rehabilitation participation	> participation		+	●	
	Rehabilitation	In-hospital sessions		+		●
		Early rehab		+	●	●
Functional Capacity	Pre-fracture walking ability	Outdoors	NM	+		●
		Without aids outdoors		+	●	
		Only with aids		-	●	
		Only indoors		-	●	
		Better Paker Mobility Score		+	●	
	Walking ability at discharge	Unsteady gait	M	-		●
		With T-cane		+		●
		Able with human assistance		+	●	
	Ambulatory Self-Confidence	Week 0—Rehabilitation		+	●	
	Fear of falling	Absent		+	●	
	Pre-fracture BI	> score	NM	+	●	●
		< 90		-	●	●
	BI at discharge	> score	M	+	●	●
		Able with human assistance		+	●	
	Pre-fracture NEADL	> 54	NM	+	●	
	Pre-fracture Katz Index	> score		+	●	●
	Pre-fracture FIM-B1	> score		+	●	●
	Handgrip strengtht	Intermediate tertile		+	●	●
		Highest tertile		+	●	●
		Continuous >		+	●	●
	Hip muscle strenght	> strenght		+	●	
	Pre-fracture DASH score	< score		+		●
	Pre-fracture BADLs	Eating		+	●	
		Bathing		+	●	●
		Bladder management		+	●	
	Pre-fracture IADLs	Independence		+		●
		Ability to do housework		-		●
	Pre-fracture functional status	Dependency		-	●	●
	Assistance	Caregiver		-	●	●

*SPMSQ: Short Portable Mental Status Questionnaire; BADLs: Basic Activities of Daily Living; IADLs: Instrumental Activities of Daily Living; FIM: Functional Independence Measure; NEADL: Nottingham Extended Activities of Daily Living Scale score; BI: Barthel Index; CES-D: Center for Epidemiological Studies Depression Scale; CIRS: Cumulative Illness Rating Scale-Geriatrics; MMSE: Mini-Mental State Examination; *FO: Femoral Offset

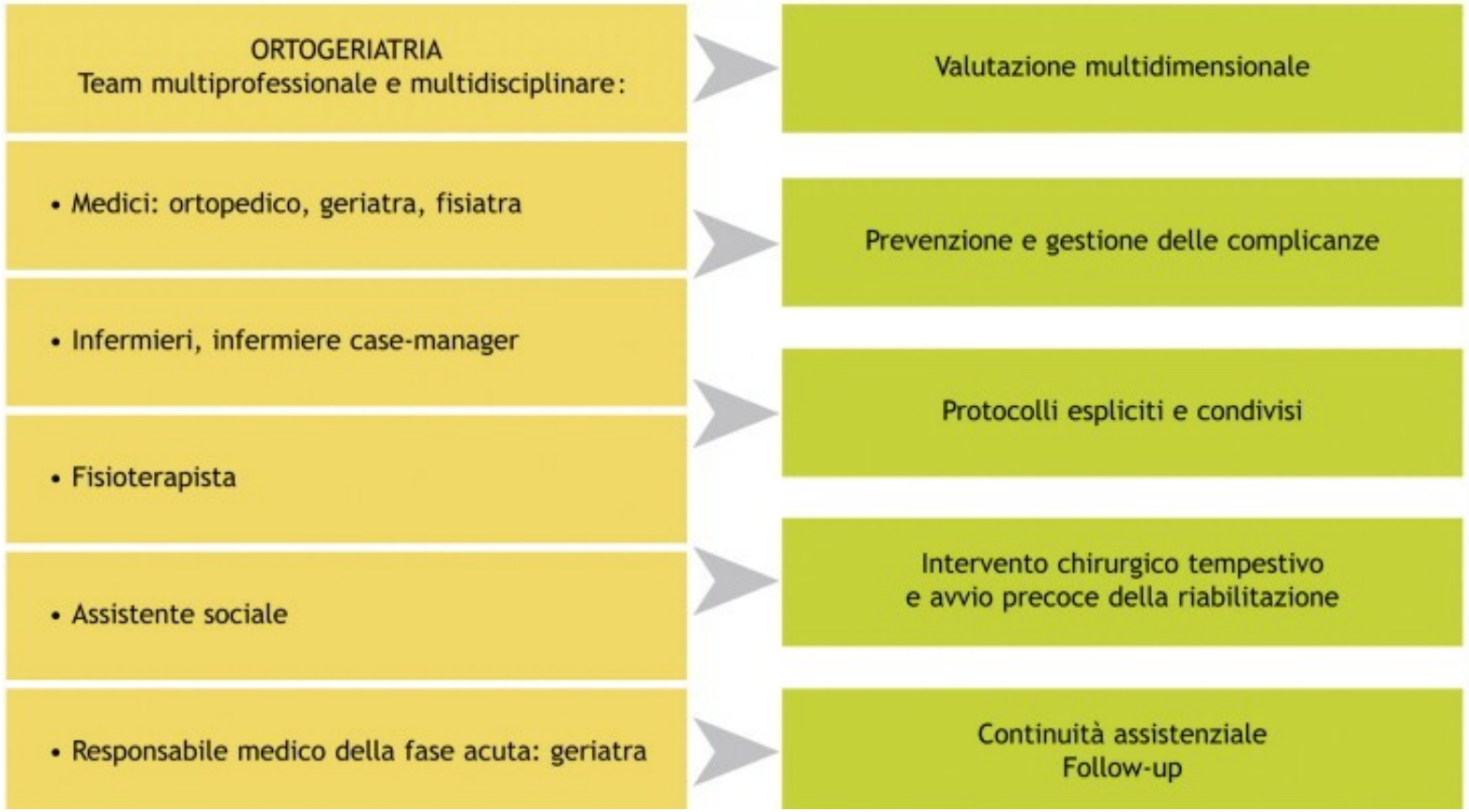
**In the Impact of the factors we classify them by the possibility of changing the factor in order to modify the outcome. We used two categories: M = Modifiable & NM = Non-Modifiable

Gestione multidisciplinare (Modello ortogeriatrico)

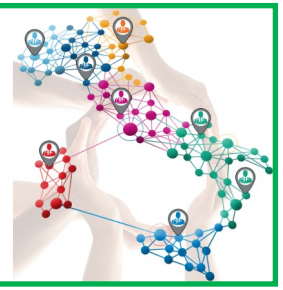


Approccio olistico:

- Competenza medica multi-sistema e psico-sociale
- Gestione della fragilità e delle comorbidità
- Riabilitazione e programmazione della dimissione



La gestione post-acuta: indicatori di esito funzionale e globale nel modello ortogeriatrico



Randomized Controlled Trial > Osteoporos Int. 2016 Mar;27(3):933-942.
doi: 10.1007/s00198-015-3313-9. Epub 2015 Sep 14.

The long-term effect of comprehensive geriatric care on gait after hip fracture: the Trondheim Hip Fracture Trial--a randomised controlled trial

P Thingstad [1], K Taraldsen [2], I Saltvedt [2 3], O Sletvold [2 3], B Vereijken [2], S E Lamb [4], J L Helbostad [2 5]

Meta-Analysis > J Trauma Acute Care Surg. 2020 Feb;88(2):266-278.
doi: 10.1097/TA.0000000000002482.

Elderly adults with isolated hip fractures–orthogeriatric care versus standard care: A practice management guideline from the Eastern Association for the Surgery of Trauma

Kaushik Mukherjee [1], Steven E Brooks, Robert D Barraco, John J Como, Franchesca Hwang, Bryce R H Robinson, Marie L Crandall

A 4 mesi:

- maggiore autonomia nella deambulazione senza ausili (81% vs 66%)

A 12 mesi:

- punteggi più elevati nel **dominio «mobilità»** della Nottingham E-ADL (questions are about everyday activities)
- incremento della **deambulazione indipendente** in- e out-door e caratteristiche del passo migliori

- **Activity Daily Living:** incremento significativo a 4 e 12 mesi

La gestione post-acuta: indicatori di esito funzionale nel modello ortogeriatrico

Calcified Tissue International (2022) 110:162–184
https://doi.org/10.1007/s00223-021-00913-5

ORIGINAL RESEARCH

Effects of Orthogeriatric Care Models on Outcomes of Hip Fracture Patients: A Systematic Review and Meta-Analysis

Annelore Van Heghe[1] · Gilles Mordant[2] · Jolan Dupont[3,4,5] · Marian Dejaeger[3,4,5] · Michaël R. Laurent[4,6] · Evelien Gielen[3,4,5]

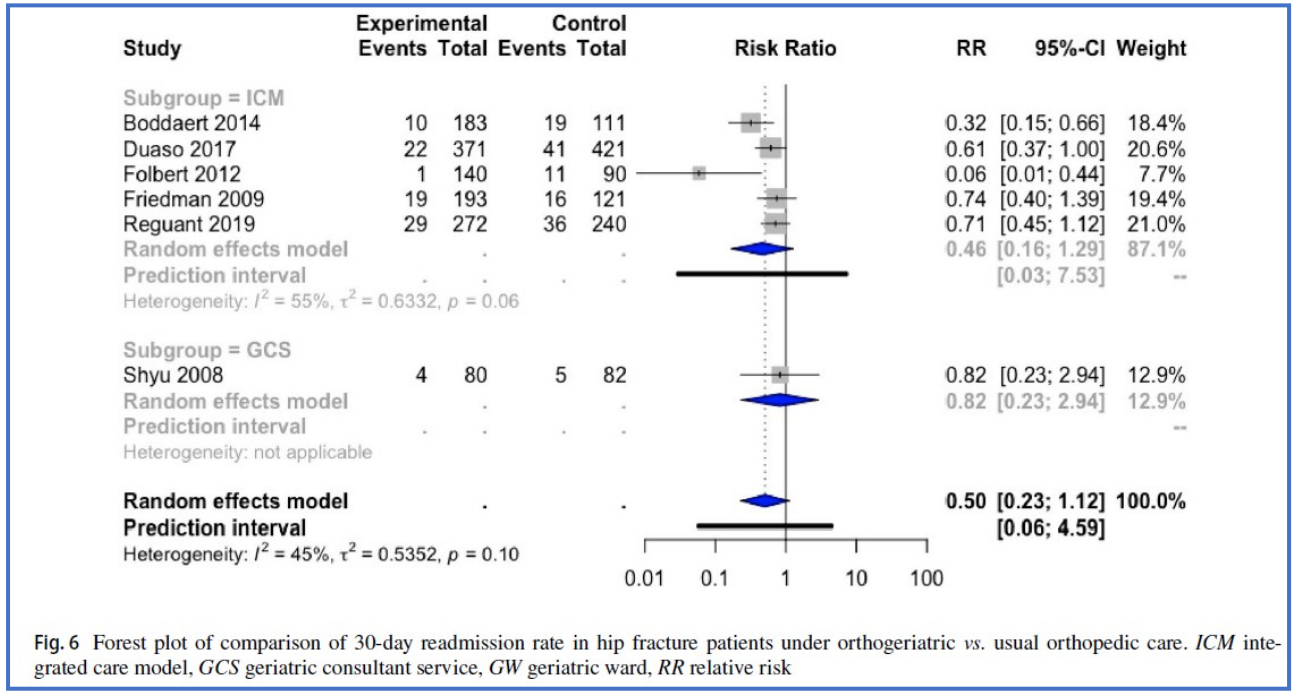


Fig. 6 Forest plot of comparison of 30-day readmission rate in hip fracture patients under orthogeriatric *vs.* usual orthopedic care. *ICM* integrated care model, *GCS* geriatric consultant service, *GW* geriatric ward, *RR* relative risk

Table 3 Functional outcome

Study	ADL scale	Care model	FU (m)	ADL score of intervention group	ADL score of control group	*p* value
Bano et al. [34]	Katz index 0 = fully dependent 6 = fully independent	ICM	6	Mean loss (SD) 1.1 (1.7)	Mean loss (SD) 2.4 (2.2)	**< 0.001**
Deschodt et al. [27]	Katz index 6 = fully independent 18 = fully dependent	GCS	4 12	Mean (SD) 10.0 (3.8) 9.8 (3.8)	Mean (SD) 10.8 (3.9) 10.0 (3.4)	0.19 0.34
Prestmo et al. [21]	Barthel index 0 = fully dependent 20 = fully independent	GW	1 4 12	Mean (SE) 14.53 (0.28) 16.31 (0.29) 16.46 (0.29)	Mean (SE) 14.21 (0.29) 15.30 (0.29) 15.33 (0.30)	0.43 **0.013** **0.007**
Watne et al. [22]	Barthel index 0 = fully dependent 20 = fully independent	GW	4 12	Median (IQR) 17 (10–20) 17 (9.5–19)	Median (IQR) 16 (12–20) 16 (11–19)	0.80 0.44
Naglie et al. [23]	Modified Barthel index 0 = fully dependent 100 = fully independent	ICM	3 6	Mean (SD) 62.0 65.0	Mean (SD) 62.4 65.7	NS NS
Shyu et al. [18]	Chinese Barthel index 0 = fully dependent 100 = fully independent	GCS	1 3 6 12	Mean (SD) 81.24 (15.49) 88.82 (13.37) 91.84 (11.41) 90.53 (18.40)	Mean (SD) 72.92 (19.77) 79.93 (20.00) 84.08 (18.71) 84.36 (24.02)	*p* value for ADL performance trajectory: **0.002**

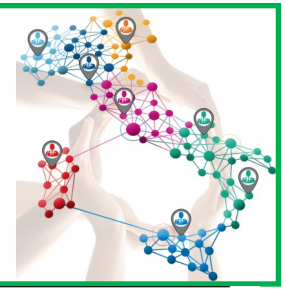
Bold values denote statistical significance at the $p < 0.05$ level

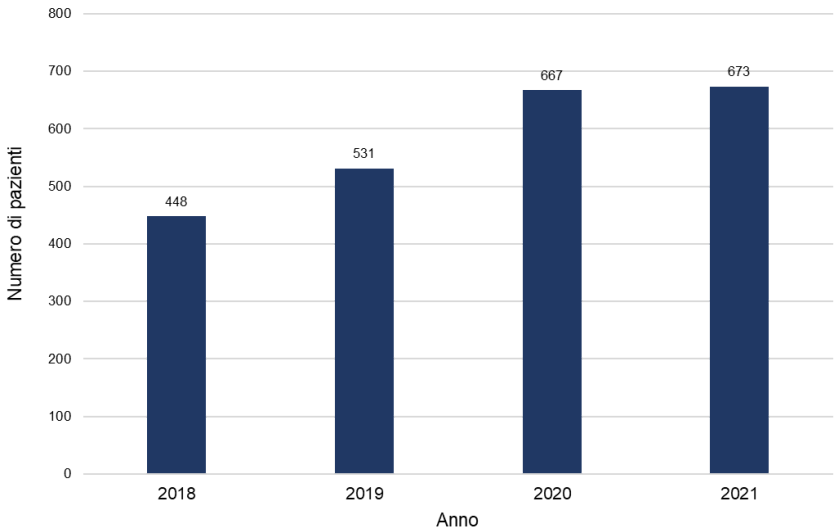
ADL activity of daily living, *GW* geriatric ward, *GCS* geriatric consultant service, *ICM* integrated care model, *FU* follow-up, *SD* standard deviation, *IQR* interquartile range, *SE* standard error, *NA* not assessed, *m* month

Functional Outcome

We found that the effect of orthogeriatrics on functional outcome (**measured as ADL performance**) was inconsistent, with patients admitted to orthogeriatric Integrated Care Model as well as to orthopedic surgeon consultant service and geriatric medicine consultant service showing better ADL performance or no difference compared to standard of care.

Azienda Ospedale Università di Padova: le scale utilizzate





Pazienti dimessi dall'AOUP con diagnosi di frattura di femore negli anni 2018-2021

TAB. 2 - SCALA DI VALUTAZIONE DELLE ATTIVITÀ DELLA VITA QUOTIDIANA (Barthel Index)

(Mahoney FI, barthel DV: Mar.St.Med.J, 1965;14:61-65)

	A) dipendente	B) con aiuto	C) indipendente
Alimentazione	0	5	10
Abbigliamento	0	5	10
Toilette personale	0	0	5
Fare il bagno	0	0	5
Controllo defecazione	0	5	10
Controllo minzione	0	5	10
Spostarsi dalla sedia al letto e ritornare	0	10	15
Montare e scendere dal WC	0	5	10
Camminare in piano	0	10	15
Scendere o salire le scale	0	5	10
PUNTEGGIO TOTALE: _____ /100			

BARTHEL INDEX

FIM™ - Functional Independence Measure

MOTOR ITEMS	COGNITIVE ITEMS
SELF-CARE	*COMMUNICATION*
1. Eating	14. Comprehension
2. Grooming	15. Expression
3. Bathing	*SOCIAL COGNITION*
4. Dressing-upper body	16. Social interaction
5. Dressing-lower body	17. Problem solving
6. Toileting	18. Memory
SPHINCTER CONTROL	
7. Bladder management	
8. Bowel management	
MOBILITY / TRANSFER	
9. Bed-chair-wheelchair	
10. Toilet	
11. Tub-shower	
LOCOMOTION	
12. Walk-wheelchair	
13. Stairs	

SCORING LEVELS

7 Complete independence
6 Modified independence
5 Supervision
4 Minimal assistance
3 Moderate assistance
2 Maximal assistance
1 Total assistance

SCALA FIM

0	Nessun sintomo
1	Nessuna disabilità significativa malgrado i sintomi: è in grado di svolgere tutte le attività e i compiti abituali
2	Disabilità lieve: non riesce più di svolgere tutte le attività precedenti, ma è autonomo/a nel camminare e nelle attività della vita quotidiana
3	Disabilità moderata: richiede qualche aiuto nelle attività della vita quotidiana, ma cammina senza assistenza
4	Disabilità moderatamente grave: non è più in grado di camminare senza aiuto né di badare ai propri bisogni corporali
5	Disabilità grave: costretto/a a letto, incontinente e bisognoso/a di assistenza infermieristica e di attenzione costante
	TOTALE

MODIFIED RANKIN SCALE

		Punteggio					
Arto superiore destro	Presa a pinza	0	11	19	22	26	33
	Flessione gomito	0	9	14	19	25	33
	Abduzione spalla	0	9	14	19	25	33
Punteggio totale arto superiore Dx: /100							

		Punteggio					
Arto superiore sinistro	Presa a pinza	0	11	19	22	26	33
	Flessione gomito	0	9	14	19	25	33
	Abduzione spalla	0	9	14	19	25	33
Punteggio totale arto superiore Sx: /100							

		Punteggio					
Arto inferiore destro	Dorsiflessione caviglia	0	9	14	19	25	33
	Estensione ginocchio	0	9	14	19	25	33
	Flessione anca	0	9	14	19	25	33
Punteggio totale arto inferiore Dx: /100							

		Punteggio					
Arto inferiore sinistro	Dorsiflessione caviglia	0	9	14	19	25	33
	Estensione ginocchio	0	9	14	19	25	33
	Flessione anca	0	9	14	19	25	33
Punteggio totale arto inferiore Sx: /100							

MOTRICITY INDEX

Take home message

- Esistono diversi strumenti, scale e indicatori per studiare l'esito del trattamento chirurgico e riabilitativo.

- L'implementazione di questi strumenti nella pratica clinica può guidare una gestione più personalizzata, migliorando gli esiti complessivi per i pazienti con fratture dell'anca

- **Proposta: definire un CORE SET per indicatori di esiti funzionali e globali e di scale di valutazione in pazienti con frattura di femore da fragilità**

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