

Evaluation de la fragilité aux urgences et en réanimation



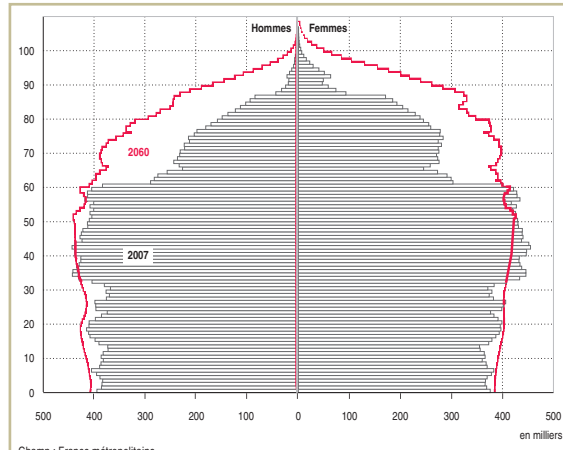
Société
Française de
Gériatrie et
Gérologie



Dr Drevet Sabine, Grenoble
22 novembre 2018

Vieillessement
=
Profils Hétérogènes

Vieillesse de population



Insee, 2018

	Homme	Femme
Espérance de vie à la naissance	76	83
Espérance de vie à 75 ans	10	13
Espérance de vie à 85 ans	6	7
Espérance de vie à 90 ans	3	4

Plus de 75 ans

9,1% → 15,6% en 2050

Réanimation

Plus de 80 ans

16% des admissions 2005

→ 20-25% actuellement

Bagshaw SM, Crit Care, 2009

Urgences

Plus de 75 ans

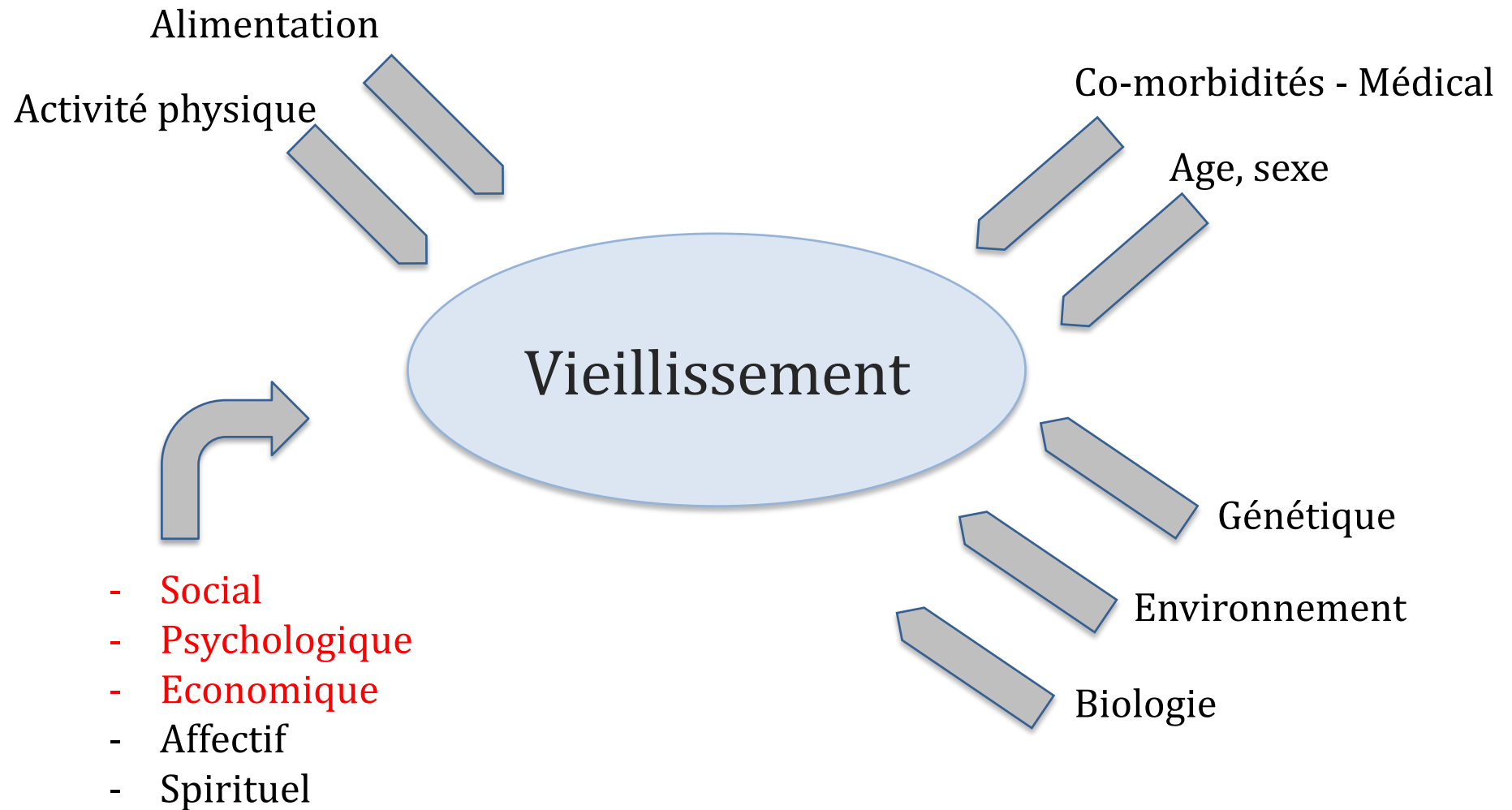
16% des consultations

60 - 75% hospitalisés

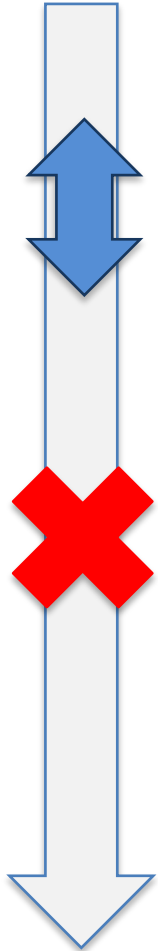
Panorama Pays de Loire

Transition démographique
Espérance de vie sans incapacités

Déterminants du vieillissement



Hétérogénéité



■ Robuste

- Autonome sans comorbidité majeure ni syndrome gériatrique
- Réserves fonctionnelles peu modifiées.

■ Fragile

- Diminution des réserves
- À risque de décompensation / syndrome gériatrique

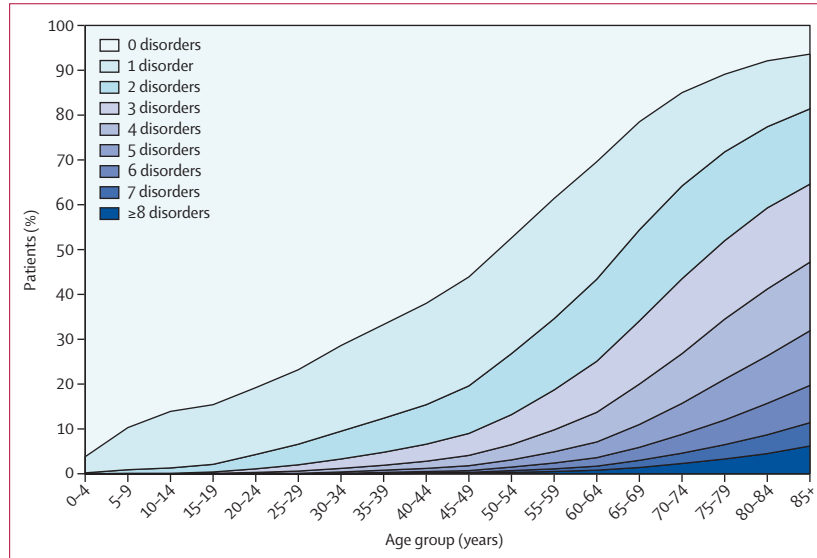
■ Polypathologique dépendant

- Impossibilité partielle ou totale d'effectuer sans aide, les activités de la vie qu'elles soient physiques, psychiques ou sociales et de s'adapter à son environnement.

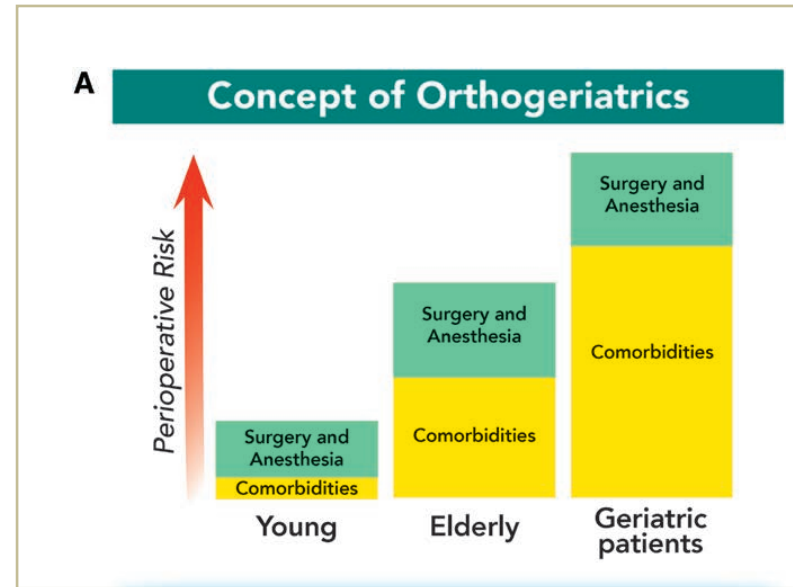
Modèle de Balducci

3 profils, des enjeux différents

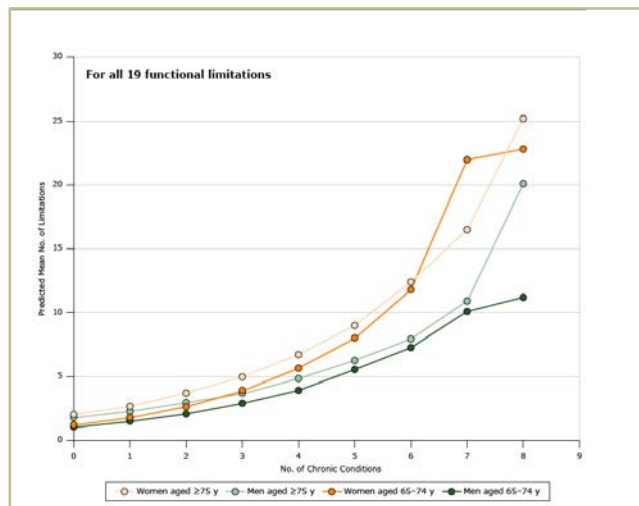
Poids des co-morbidités



Barnett K, Lancet, 2012



Boddaert J, Anesthesiology, 2014



Jindai K, Prev Chronic Dis, 2016

Multi-morbidité

Degré de sévérité des comorbidités

Malnutrition protéino énergétique

Activities of Daily Living

Katz
Dépendance
6 items
Cotation 1 – 0,5 – 0

ADL 6/6 = être indépendant

ADL (Activities of daily living)

- Se laver
- S'habiller
- Se rendre aux toilettes
- Se déplacer
- S'alimenter
- Etre continent

Score de 0 (totalement dépendant) à 6 (totalement autonome)

TABLEAU 1 : score ADL (activities of living)

Conf consensus urgence, sfmu, 2003
Katz S, JAMA, 1963

n= 1800, ICU, > 80 ans

Mortalité intra hospitalière 21%

Mortalité à 1 an 38%

ADL < 6/6 (pré hospitalier) OR= 1,75

Ne pas être capable de marcher 400m OR= 2

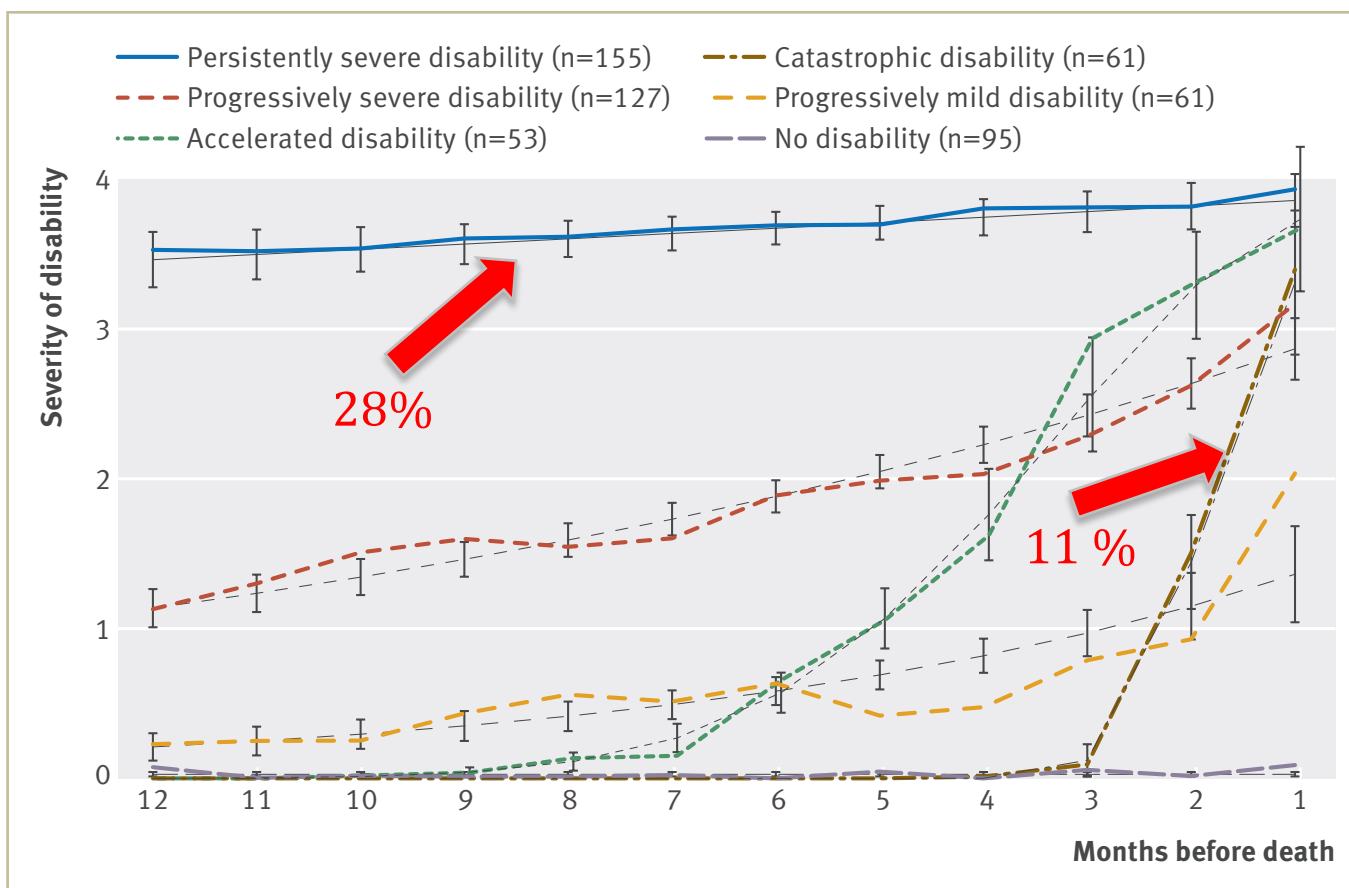
Pietilainen L, Intensive Care Med, 2018

Statut fonctionnel « pré-événement »

Trajectoire fonctionnelle

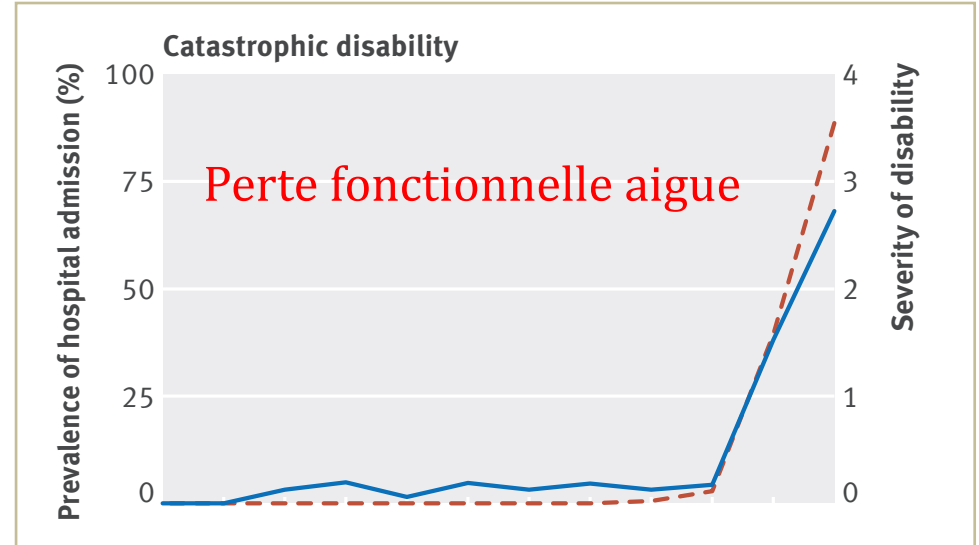
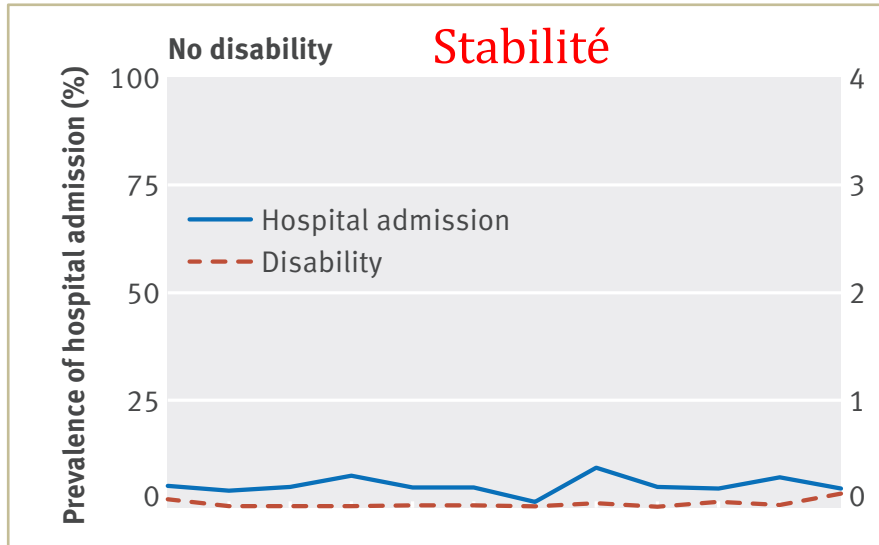
Etude prospective 1998 - 2013
n= 754, > 70 ans, communautaires
Initialement **indépendants**
Evaluation fonctionnelle: 1/mois (15 ans)

→ 552 décédés analysés
sur leur **dernière année de vie**



6
trajectoires
fonctionnelles

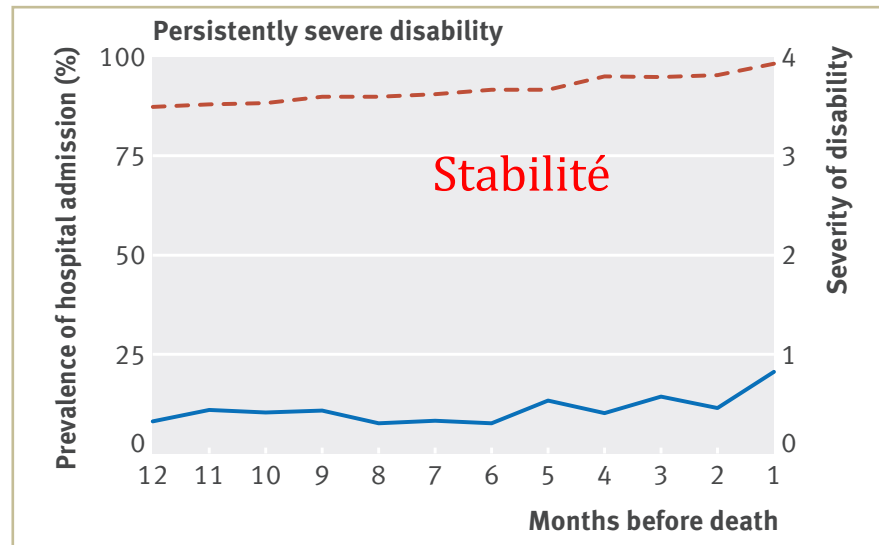
Trajectoire fonctionnelle



Gill TM, BMJ, 2015



Le Fragile ?
Complications - Hospitalisations



Cinétique fonctionnelle

Points clés intermédiaires

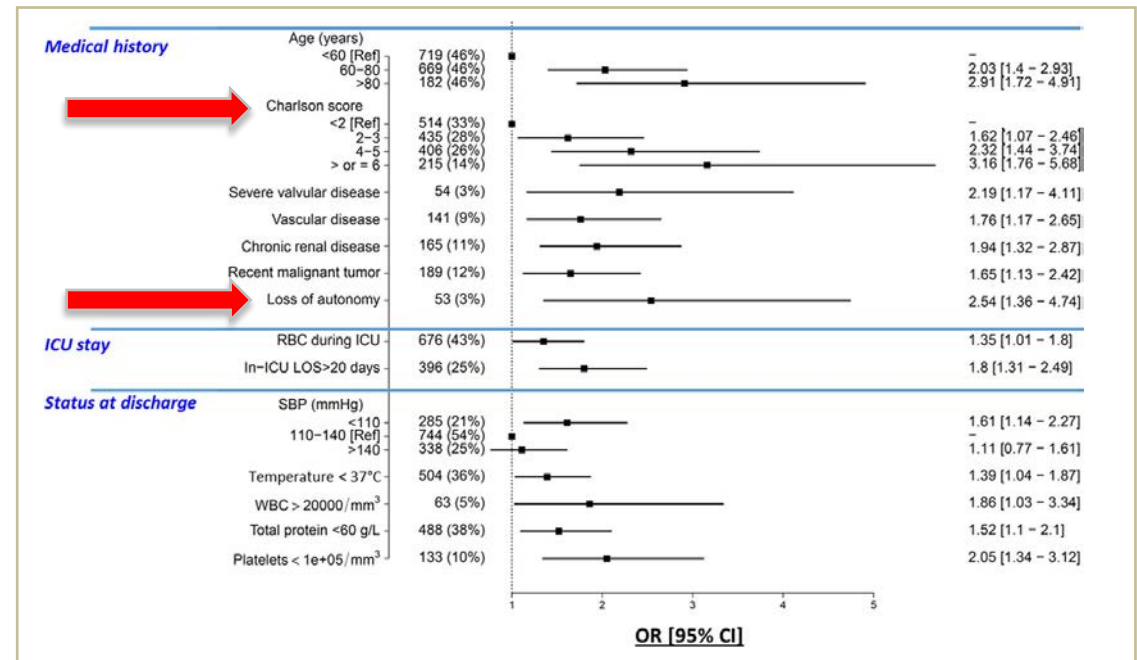
Vieillesse hétérogène

Co-morbidités

Malnutrition protéino énergétique

Statut fonctionnel pré hospitalier

→ Mortalité 1 an sortie ICU



Gayat E, Critical Care, 2018

La Fragilité

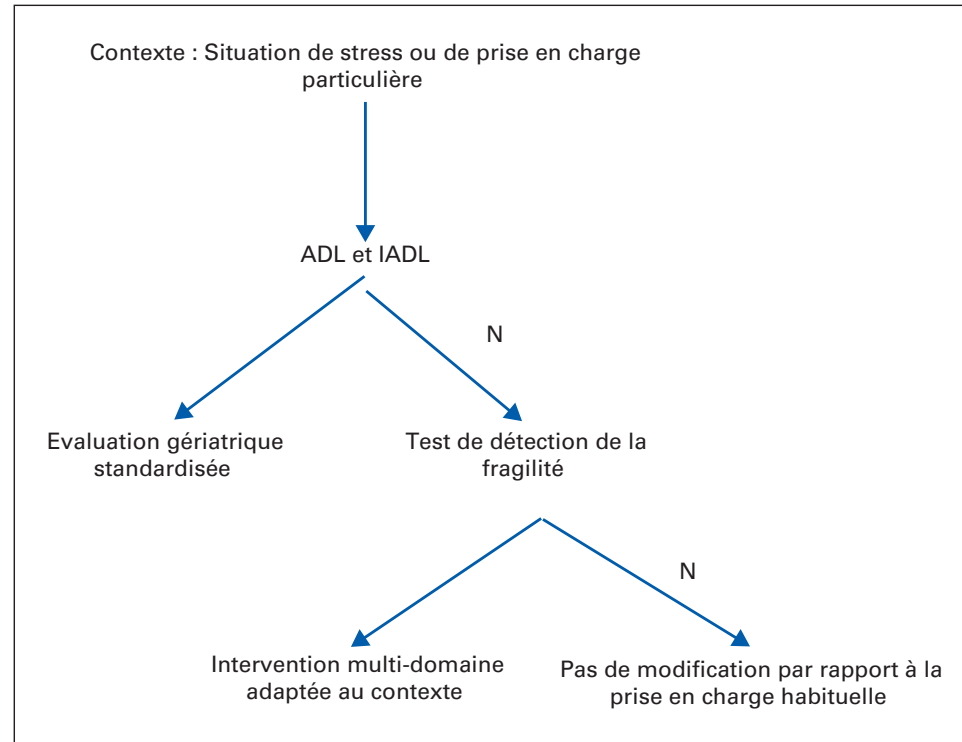


Figure 1. Proposition d'un arbre décisionnel de dépistage du syndrome de fragilité.

Figure 1. Pattern of a decision-making tree of screening frailty in older subjects.

Dépendance sur les ADL \neq Fragilité

Prévalence

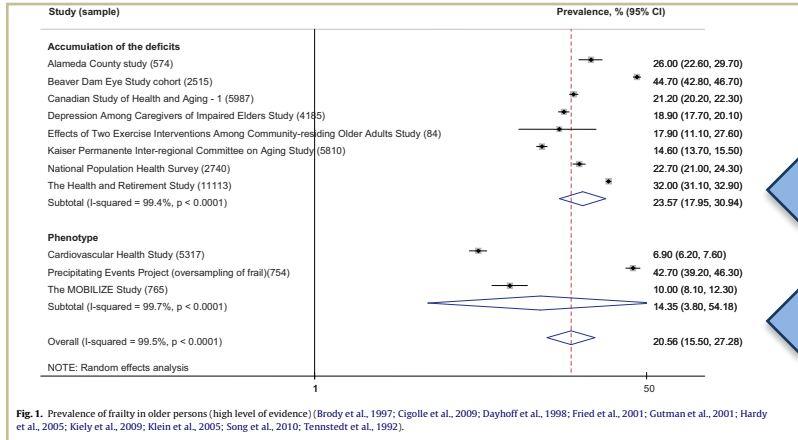


Fig. 1. Prevalence of frailty in older persons (high level of evidence) (Brody et al., 1997; Cigolle et al., 2009; Dayhoff et al., 1998; Fried et al., 2001; Gutman et al., 2001; Hardy et al., 2005; Kiely et al., 2009; Klein et al., 2005; Song et al., 2010; Tennstedt et al., 1992).

Rockwood
24%

Fried
14%

Age	Prévalence Fried
65-69	4%
70-74	7%
75-79	9%
80-84	16%
85-89	26%

Shamliyan T, Ageing Res Rev, 2013

Lancet, 2014

En ICU.....
30%

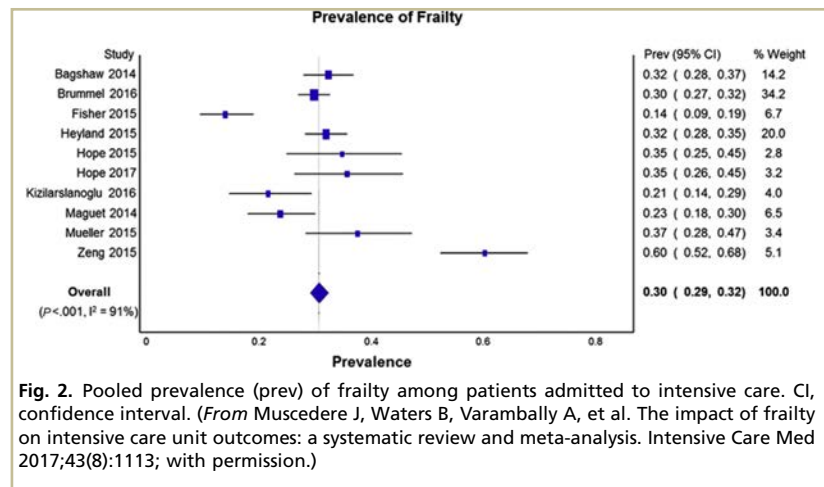


Fig. 2. Pooled prevalence (prev) of frailty among patients admitted to intensive care. CI, confidence interval. (From Muscedere J, Waters B, Varambally A, et al. The impact of frailty on intensive care unit outcomes: a systematic review and meta-analysis. Intensive Care Med 2017;43(8):1113; with permission.)

Montgomery CL, Crit Care Clinic, 2018

Définition



Décompensations de
Co-morbidités non connues

+

Complications nosocomiales

- Chute
- Iatrogénie
- Sepsis
- Complications post opératoires

Diagnostic souvent à postériori

Fragilité

Syndrome gériatrique

Déclin des réserves physiologiques

Diminution des capacités à maintenir l'homéostasie

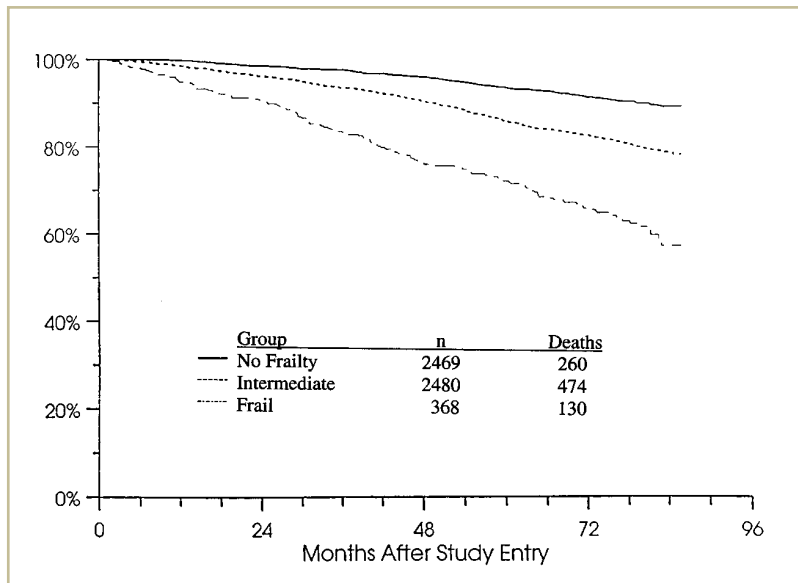
Réduction des capacités d'adaptation à un stressueur

→ Marqueur d'un niveau de risque

Chute	OR= 1,23
Déclin fonctionnel (ADL)	OR= 1,79
Hospitalisation	OR= 1,27
Institutionnalisation	OR= 2,60
Mortalité	OR= 3,69

Fragile = Profil à risque

Décès



Fried LP, 2001

Table 3

Differences in remaining life expectancy in elderly persons from the general population and with frailty.

Age	Remaining life expectancy in the general population	Frailty (phenotype)	Frailty (accumulation deficit)
65	18.4	-3.2	-1.1
70	14.9	-2.8	-1.0
75	11.7	-2.5	-0.9
80	8.9	-2.1	-0.7
85	6.5	-1.6	-0.6
90	4.6	-1.2	-0.4
95	2.8	-0.7	-0.2
100	0.4	-0.1	-0.1

Shamliyan T, Ageing Res Rev, 2013

Déclin fonctionnel

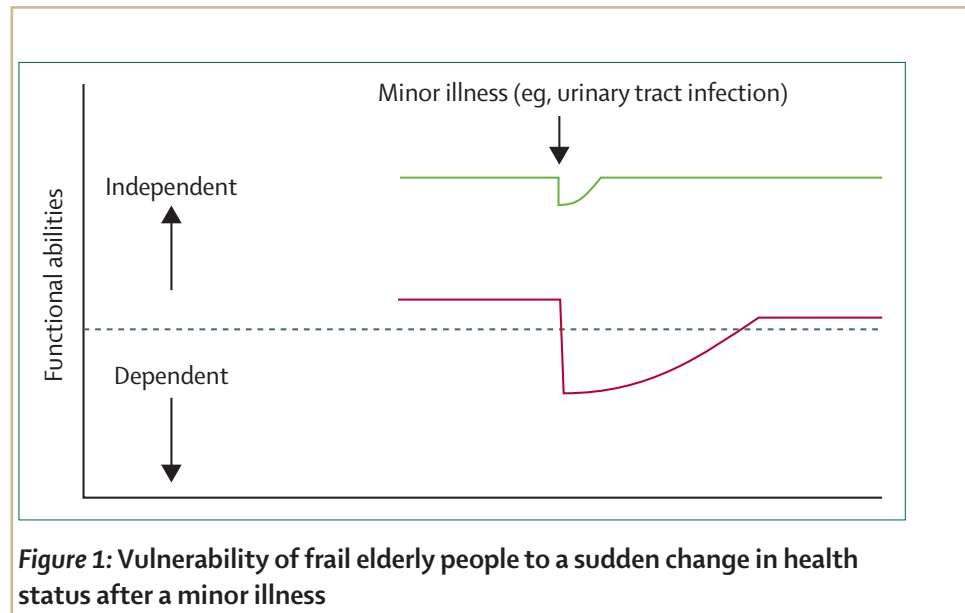


Figure 1: Vulnerability of frail elderly people to a sudden change in health status after a minor illness

Clegg A, Lancet, 2013

Réversible, Dynamique

Table 3. Numbers and Rates of Transitions According to Follow-up Interval*

Transition	Baseline to 18 mo		18 to 36 mo		36 to 54 mo	
	No.	Rate, %	No.	Rate, %	No.	Rate, %
Nonfrail to	n = 167		n = 126		n = 120	
Nonfrail	86	51.5	69	54.8	57	47.5
Prefrail	67	40.1	47	37.3	52	43.3
Frail	7	4.2	8	6.3	7	5.8
Death	7	4.2	2	1.6	4	3.3
Prefrail to	n = 369		n = 316		n = 253	
Nonfrail	44	11.9	52	16.5	24	9.5
Prefrail	215	58.3	174	55.1	146	57.7
Frail	92	24.9	79	25.0	66	26.1
Death	18	4.9	11	3.5	17	6.7
Frail to	n = 183		n = 212		n = 224	
Nonfrail	0	0.0	0	0.0	2	0.9
Prefrail	42	23.0	38	17.9	29	12.9
Frail	117	63.9	140	66.0	148	66.1
Death	24	13.1	34	16.0	45	20.1

Gill TM, Arch Intern Med, 2006

Etat instable

1% passent de « fragile » à « robuste »

Presque ¼ évoluent vers un niveau de fragilité inférieur (moins fragile)

Place à l'optimisation des prises en charges
Retarder la dépendance et le handicap

Vieillesse et activité physique

Etude randomisée

Critère de jugement

perte de la capacité de marcher 400m sans aide humaine en 15 min

Activité aérobie

En résistance

Souplesse

2/sem cabinet

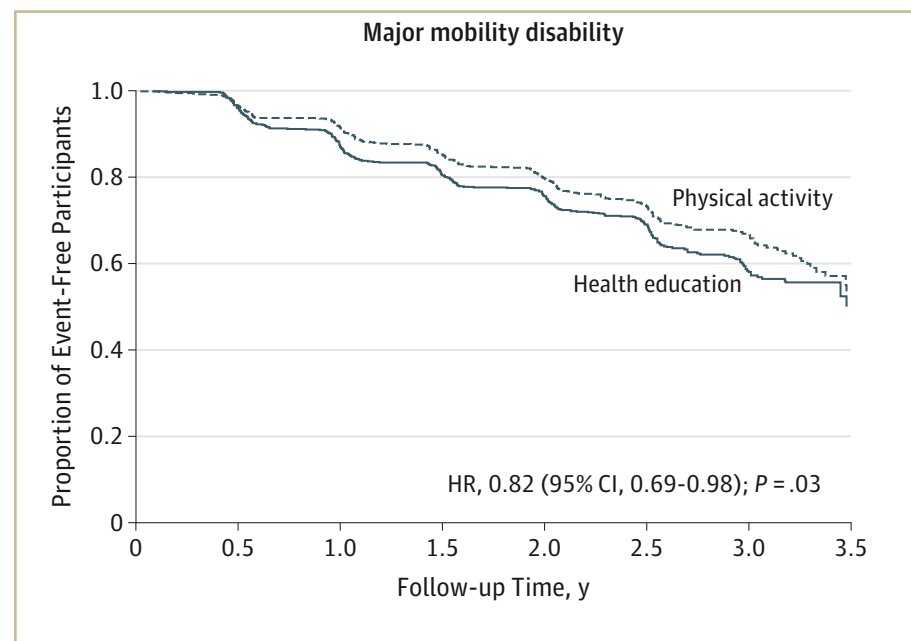
+

3/sem domicile



Education

Perte de la capacité
30% vs 35%



Pahor M, JAMA, 2014

**Réduction de 20 %
du risque de perte de la fonction**

Points clés intermédiaires

Fragilité prévalente

Profil à risque

« Pré-entrée en dépendance »

Dynamique / Réversible

Densité de soins précoce

Retarder l'apparition de la dépendance

Evaluer la fragilité

–

Pourquoi?

Table 3

The potential knowledge implications of routine evaluation for frailty among critically ill and surgical patients

Knowledge Implication	Detail
Triage decision making	Decision making on the suitability and benefit of ICU admission or listing for surgical procedure
Therapeutic decision making	Decision making regarding the scope and duration of ICU support (ie, time-limited trials) Decision making about setting and/or discussion of goals of care Prognostic information about post-ICU or surgical survivorship experiences (ie, impact on HRQL, autonomy, disposition, health services use)
Transition of care	Informed priorities/specialized needs for transfer from ICU/HDU to regular ward Informed priorities/specialized needs for transfer from hospital to community (ie, home-based geriatric services, primary care communication)
Interventions	Aimed to maximize physical recovery (ie, minimize disability) Aimed to maximize cognitive, psycho-social and emotional recovery Aimed to support family caregivers (ie, mitigate burden)

Abbreviations: HDU, high-dependency unit; HRQL, health-related quality-of-life; ICU, intensive care unit.

Montgomery CL, Crit Care Clinic, 2018

Triage / admission

Guidet B, JAMA, 2017

Projet de soin

Trajectoire de soin

Optimisation

Facteurs pronostics en ICU

Characteristics associated with disability and/or death in older ICU survivors

Characteristic or Exposure	Measurement	Comment	Supporting Studies
Age		Independent predictor in more recent larger cohort studies, but not in older smaller cohort studies	10–14
Pre-Existing Disability	Admission from skilled-care facility, Katz ADLs, Barthel Index	Pre-hospitalization estimates of disability using more detailed surveys than the Katz ADLs need validation (e.g. Barthel Index).	4, 19, 20, 28, 58
Pre-Existing Frailty	CFS	Subjective measure that quickly identifies at risk patients	67
Severe Sepsis		Persistent physical disability and neurocognitive impairment for up to 8 years after treatment of the initial infection	36
Medical or Unplanned Surgical ICU Admission			13
Use of Mechanical Ventilation			5, 16
Chronic Critical Illness	PMV via tracheostomy \geq 10 days	Highest reported mortality among older ICU survivors	16, 24
Burden of Comorbidity	High Charlson Comorbidity Score		14, 19
DNR Preference	DNR order at hospital discharge	DNR decision reflects a patient preference, and may also reflect a severity of chronic illness and frailty not captured with other measurements	19
Disability at Hospital Discharge	Discharge to skilled-care facility, Katz ADLs, Barthel Index	Less disability is predictive of full-functional recovery among 1-year older ICU survivors (23)	5, 16, 19, 23, 28
Frailty at Hospital Discharge	CFS or Fried's Index	Fried's frailty measurements identify deficits that may be targets for post-ICU interventions	19, 68

ADL: Activities of Daily Living; CFS: Clinical Frailty Scale; PMV: Prolonged Mechanical Ventilation; DNR: Do-Not-Resuscitate

Fragilité associée à la mortalité

Prospective

n= 5021

84 ans

Mortalité ICU

22,1%

Mortalité J30

32,6%

Fragilité (CFS)

43,1%

Indépendamment associée à la mortalité

Table 3 Survival analysis all patients (Cox model: all patients are censored at a maximum of 30 days)

	HR (95% CI)	p
Univariate analysis		
Frailty		
Vulnerable (4) vs fit (1-3)	1.24 (1.07-1.43)	0.005
Frail (5-9) vs fit (1-3)	1.88 (1.67-2.1)	< 0.001
Frailty		
2 vs 1	1.33 (0.91-1.93)	0.136
3 vs 1	1.27 (0.89-1.81)	0.187
4 vs 1	1.56 (1.09-2.23)	0.014
5 vs 1	1.97 (1.38-2.81)	< 0.001
6 vs 1	2.16 (1.51-3.08)	< 0.001
7 vs 1	3.08 (2.15-4.41)	< 0.001
8 vs 1	3.29 (2.20-4.92)	< 0.001
9 vs 1	4.50 (2.45-8.25)	< 0.001
Age		
5-year increase	1.21 (1.14-1.30)	< 0.001
Gender		
Male vs female	1.11 (1.01-1.22)	0.039
SOFA score		
One-point increase	1.14 (1.13-1.16)	< 0.001
Type of admission		
Acute vs elective	6.72 (5.22-8.67)	< 0.001
Multivariate analysis		
Frailty		
Vulnerable (4) vs fit (1-3)	1.19 (1.03-1.38)	0.021
Frail (5-9) vs fit (1-3)	1.54 (1.38-1.73)	< 0.001
Age		
5-year increase	1.2 (1.12-1.28)	< 0.001
Gender		
Male vs female	1.17 (1.06-1.29)	0.002

Fragilité = marqueur d'intérêt

Multicentrique prospective 2016 et 2017
n= 272; >80 ans, SOFA moyen 10.
→ mortalité en ICU et mortalité à J30

Fragilité (CSF)

62,5%

Survie ICU

54,6%

Survie J30

47,3%

Table 2. Multiple logistic regression model — mortality in the ICU

Characteristic	Estimate	SE	P-value	Adjusted OR (95%CI)
SOFA score	0.15	0.03	< 0.001	1.16 (1.09–1.24)
Frailty	0.81	0.30	0.006	2.25 (1.26–4.01)
Acute admission	1.63	0.57	0.004	5.10 (1.67–15.57)
Age (years)	0.042	0.037	0.25	1.04 (0.97–1.12)
Gender (female)	0.15	0.28	0.58	1.17 (0.67–2.02)
Intercept	-8.96	3.19	0.005	-

SOFA: Sequential Organ Failure Assessment

Fronczek J, Anesthesiology Intensive Therapy, 2018

Fragilité meilleure que l'âge ou le SOFA pour prédire le décès intra ICU ?

Chez l'agé, d'autres indicateurs sont à prendre en compte

Evaluer la fragilité

–

Comment ?

Evaluation gériatrique standardisée

Globale

Temps

En dehors d'une phase aigue

Fried

USA

Dimensions motrice + énergétique

Evaluation clinique

« **Phénotype de fragilité** »

Evaluation mesurée

Rockwood

Canada

Dimensions physiques + cognitivo-sociales

Accumulation de déficits (symptômes, clinique, maladie, biologie)

« **Index de fragilité** globale, multi-domaine »
Plusieurs révisions des échelles.

Interrogatoire

**Approche Physiologique
Gold Standard**

Fried, Phénotype de fragilité

Perte de poids

- 5% sur 1 an

Vitesse de marche lente

- < 0,6m/sec

Sédentarité

- < 380 Kcal/sem (homme)
- < 270 Kcal/sem (femme)

Faiblesse musculaire

- HandGrip réduit de 20% /norme

Fatigue

- Épuisé / fatigue permanente
- Au moindre effort

Mesures OBJECTIVES

Si ≥ 3 items	Fragile
Si 1 ou 2	Pré-fragile
Si 0	Non fragile

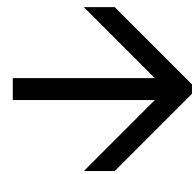
	Décès à 3 ans	Décès à 7 ans
Robuste	3%	12%
Pré-fragile	7%	23%
Fragile	18%	43%

Rockwood, Frailty-Index → CFS

Modèle du Cumul de déficits
Fragilité multi-domaine

Questionnaires à 70 items
CSHA-1 Frailty Index

- Cognition
- Humeur
- Motricité
- Équilibre
- Continence
- ADL
- Nutrition
- Conditions sociales
- Co-morbidités



Clinical Frailty Scale Jugement clinique

Box 1: The CSHA Clinical Frailty Scale

- 1 *Very fit*— robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the most fit group for their age
- 2 *Well*— without active disease, but less fit than people in category 1
- 3 *Well, with treated comorbid disease*— disease symptoms are well controlled compared with those in category 4
- 4 *Apparently vulnerable*— although not frankly dependent, these people commonly complain of being “slowed up” or have disease symptoms
- 5 *Mildly frail*— with limited dependence on others for instrumental activities of daily living
- 6 *Moderately frail*— help is needed with both instrumental and non-instrumental activities of daily living
- 7 *Severely frail*— completely dependent on others for the activities of daily living, or terminally ill

Note: CSHA = Canadian Study of Health and Aging.

7 stades

Fragilité
si ≥ 4

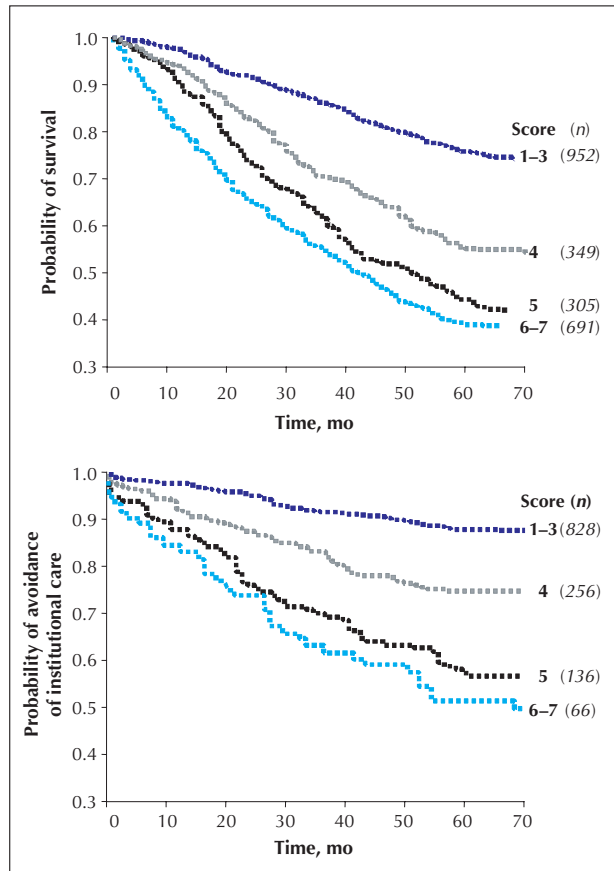
Rockwood K, CMAJ, 2005

Confusion langage?

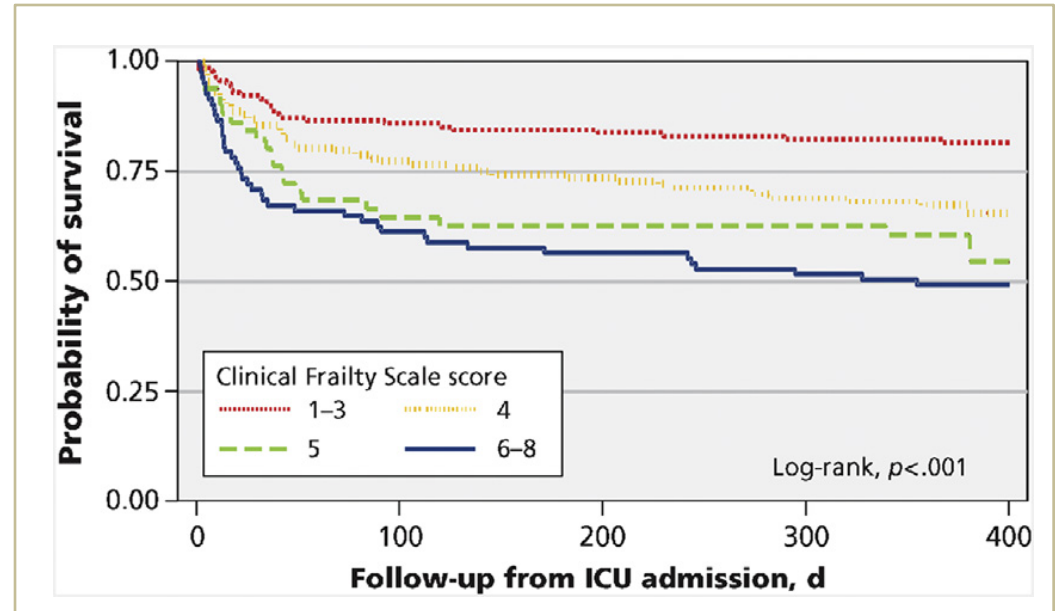
Rockwood, large utilisation

En ICU, Mortalité à 1 an

Survie



« EHPAD »



Model 4	Clinical Frailty Scale score	Relative Risk (95% CI)
	1-3	1.00 (ref)
	4	1.90 (1.18-3.07)
	5	2.50 (1.42-4.41)
	6-8	3.06 (1.87-5.01)

Fig. 1: Kaplan-Meier curves, adjusted for age and sex, for study participants (n) over the medium term (5-6 years), according to their scores on the CSHA Clinical Frailty Scale. Some scores were grouped. Top: Probability of survival. Bottom: Probability of avoidance of institutional care.

Rockwood K, CMAJ, 2005

Bagshaw SM, CMAJ, 2014

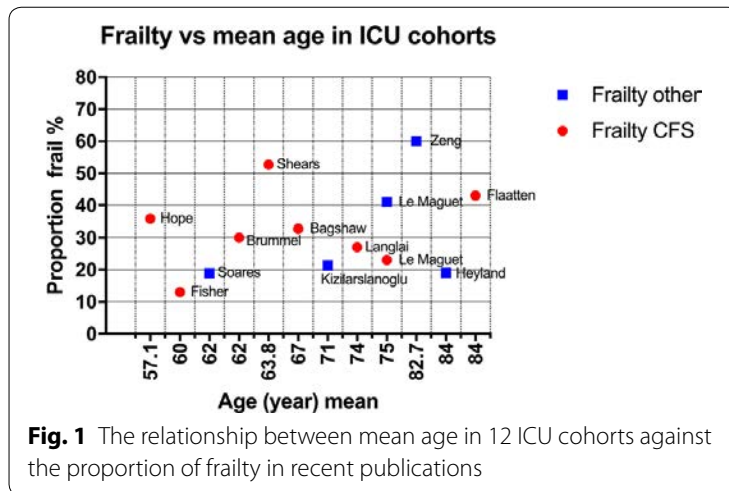
Montgomery CL, Crit Care Clinic, 2018

+ 1 catégorie?

Mortalité 21% - Institutionnalisation 23%

Problématique de l'outil d'évaluation

71 échelles de fragilité
→ 10 pertinentes
→ 2 utilisées



Flaaten H, Intensive Care Med, 2018

Variabilité des échelles utilisées

Même échelle: variabilité / reproductibilité?

→ Sous population (dépendant / fragile?)

Faisabilité de l'évaluation

Evaluer la fragilité

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Par qui?

Aux urgences

Pas le lieu ni les conditions pour un diagnostic de Fragilité
→ Evaluer le « risque de Fragilité »

1. Médical

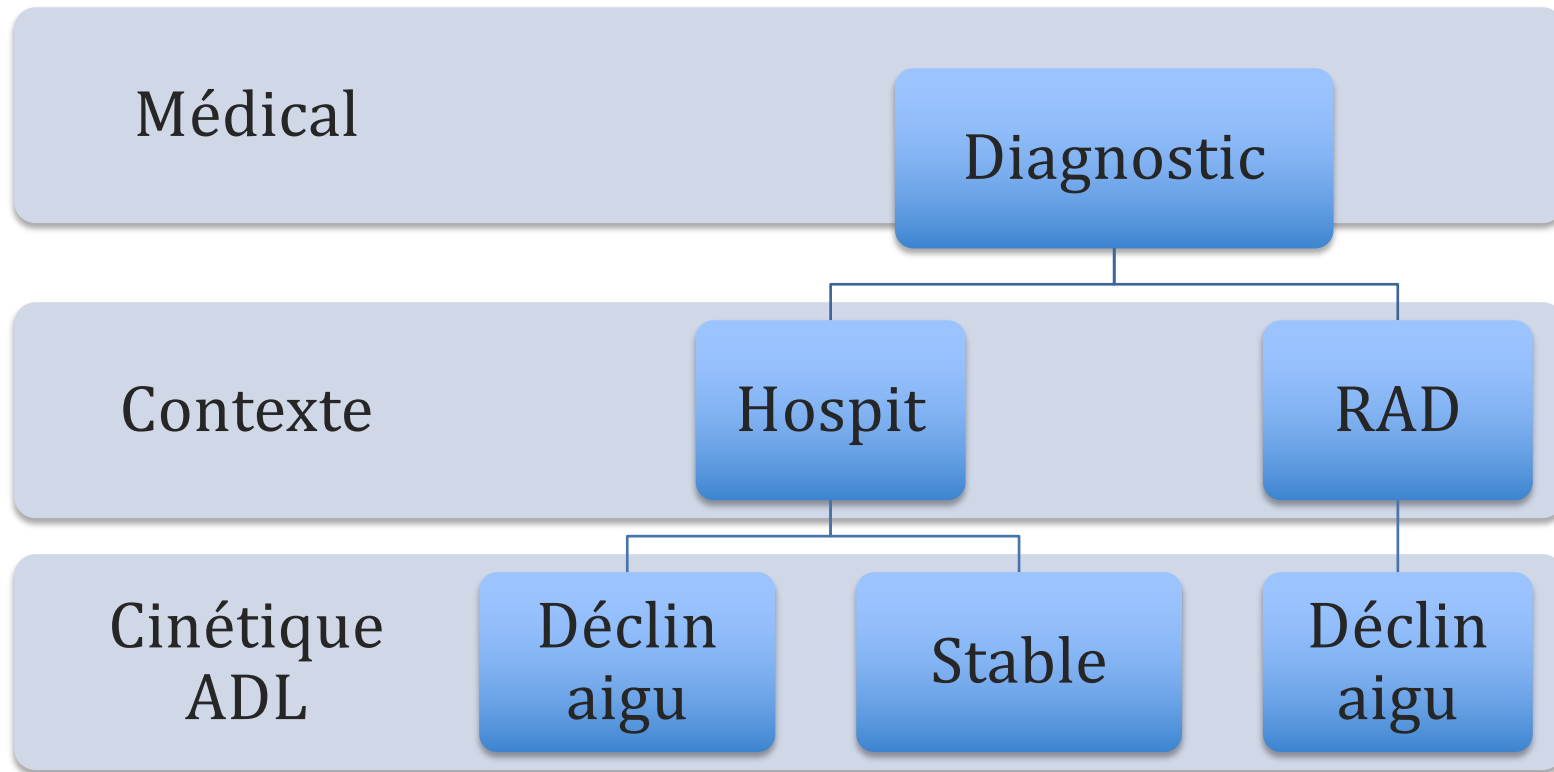
1. Film des ADL M-3 M-1 J-15 J0

Si déclin rapide et récent
→ Patient à risque de complications

Si stabilité fonctionnelle
→ pas plus à risque?

3. Orienter

Structure et parcours à développer.
Partenariat, filière post urgence



Service de Gériatrie

Dépendant
-Médecine
-Gériatrie

Robuste
-Spécialité

Vite
Consultation gériatrique
HDJ gériatrique

En réanimation

Pas le lieu ni les conditions pour un diagnostic de Fragilité
→ **Considérer tous les patients fragiles?**

1. Médical

1. Echelle de Rockwood

1. **Film** des ADL M-3 M-1 J-15 J0

Si déclin rapide et récent

→ Patient à risque de complications

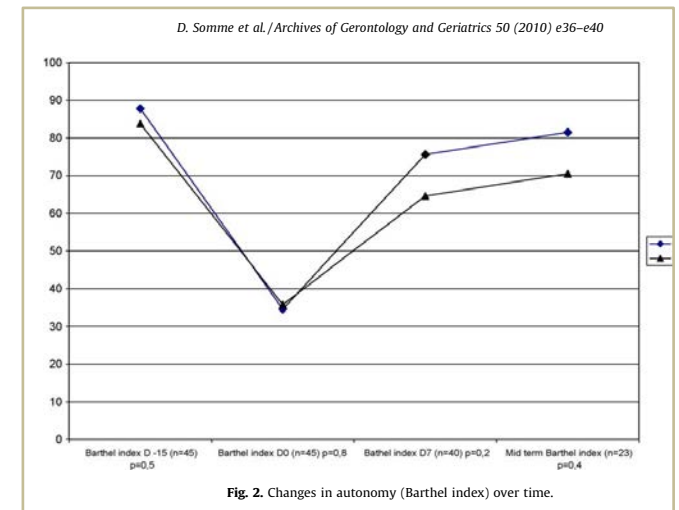
Si stabilité fonctionnelle

→ pas plus à risque

3. **Solliciter un avis gériatrique**

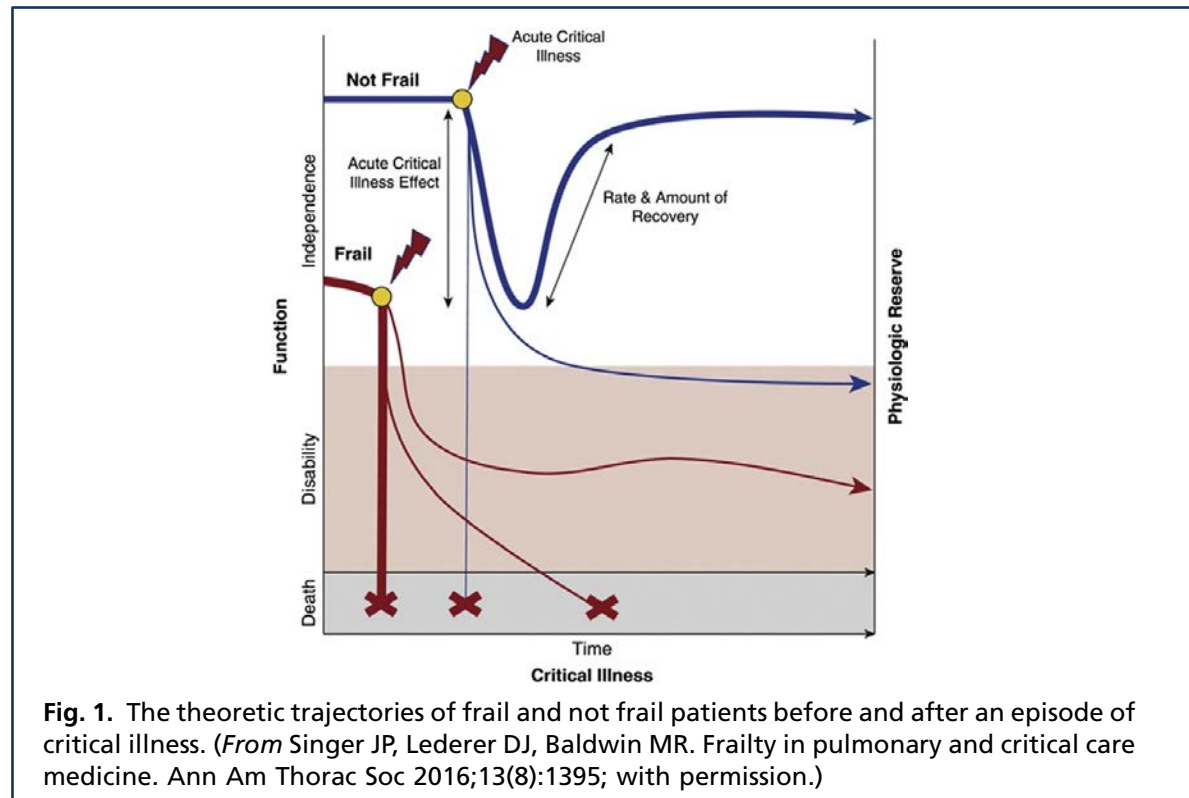
Transfert en gériatrie?

Partenariat, orientation post réanimation



Somme D, Arch Gerontol Geriatr, 2010

Take Home Messages



Montgomery CL, Crit Care Clinic, 2018

Take Home Messages

Fragilité = **Profil à risque**

Complémentaire des indicateurs habituels

Evaluation du **statut fonctionnel pré hospitalier**

1. **Film** des ADL

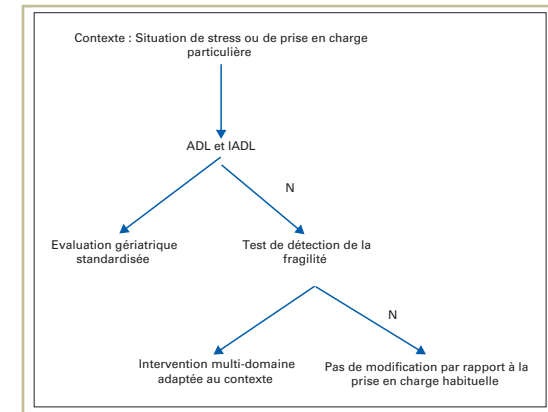
2. « Risque » de Fragilité dans un second temps

Co-morbidité

Nutrition

Elément de réflexion – aide à la décision

Partenariat – filières post Urgence et post ICU



En vous remerciant de votre attention

SDrevet@chu-grenoble.fr



Clinical Frailty Score



1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.



2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.



3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.



4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.



5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.



6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.



7 Severely Frail – Completely dependent for personal care, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).



8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.



9 Terminally Ill – Approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.