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Définition de la fragilité à partir des critères retenus dans la littérature

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UNIVERSITE de BRETAGNE OCCIDENTALE

FACULTE DE MEDECINE

ANNEE 2017 **THESE N°**

DOCTORAT EN MEDECINE

SPECIALITE : Médecine Générale

PAR

Mr WAUTERS Thomas

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PRESENTÉE ET SOUTENUE PUBLIQUEMENT LE 22 Juin 2017

DEFINITION DE LA FRAGILITE A PARTIR DES CRITERES RETENUS DANS LA LITTERATURE

THE FRAILTY DEFINITION BASED ON THE CRITERIA USED IN THE LITERATURE

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Président de thèse: Professeur Jean-Yves LE RESTE

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ABSTRACT

Introduction: Frailty is a recent geriatric concept. Numerous studies have searched this subject, but there is no consensus for a definition of frailty. However, obtaining a definition and tools for the diagnosis of fragility are becoming more and more necessary with the population getting older. The aim of the study, on the basis of the pre-existing definitions and their criteria, is to produce a definition with criteria permitting consensus.

Methods: The study is qualitative, based on a systematic review of the literature (PRISMA). From this review are extracted the definitions of frailty. The grounded theory is used to carry out a coding based on the criteria resulting from the definitions. The coding is at three levels (open-axial-thematic). The themes are then organized into a chart and each major axis is explored by a chart too. Finally, a definition is produced from the criteria.

Results: Out of 40 articles from the literature review, 348 definitions are used for coding. Of these definitions, 209 criteria are extracted as open code. Axial coding gives 52 groups. Then the thematic coding brings out 14 themes. This coding reveals a confusion between the causes, what happens before the frailty (prefrailty) and what happens after the frailty, the consequences. It is also highlighted that certain criteria make consensus in frailty such as age / aging, nutritional factors, addiction, environment.

Conclusion: Frailty is described by many definitions. By now, no consensus reached. Yet the two main recognized theories (Fried et al. vs Rockwood et al.) are not contradictious. The identified criteria can provide a common basis for the achievement of a consensus definition.

RESUME

Introduction : La fragilité est un concept dont la réversibilité fait l'intérêt. Deux modèles principaux et de multiples études abordent ce sujet sans réel consensus pour une définition de la fragilité. Une définition consensuelle avec des outils de diagnostic seraient utiles devant le vieillissement de la population. Le but de l'étude était, à partir des définitions préexistantes de produire une définition exhaustive de la fragilité permettant ensuite un consensus.

Méthodes : L'étude était qualitative, basée sur une revue systématique de la littérature par méthode PRISMA. Des articles sélectionnés étaient extraites les définitions de la fragilité. L'analyse était réalisée avec des outils issus de la théorie ancrée (grounded theory) pour réaliser un codage thématique à partir des critères issus des définitions. Le codage comprenait trois phases (ouvert-axial-thématique). Les thèmes étaient organisés en cartes heuristiques.

Résultats : Sur 40 articles issus de la revue de littérature, 348 définitions différentes ont servis au codage. De ces définitions, 209 critères furent extraits comme code ouvert. Le codage axial donne 52 axes. Puis le codage thématique fait ressortir 14 thèmes. Ce codage met en évidence une confusion entre les causes, ce qui se passe avant la fragilité (la pré fragilité) et ce qui se passe après la fragilité, les conséquences. Il est aussi mis en évidence que certains critères font consensus dans la fragilité comme l'âge/vieillissement, les facteurs nutritionnels, l'addiction, l'environnement.

Conclusion: Les 2 principales théories reconnues (théorie de Fried et al. Et théorie de Rockwood et al) ne sont pas antinomiques. Les critères maintenant identifiés peuvent offrir un socle commun pour la réalisation d'une définition consensuelle.

INTRODUCTION :

Le patient fragile est une notion de gériatrie étudiée depuis les années 80.(1) Néanmoins la première définition de la fragilité remonte à 2001 avec les travaux de Fried (2) et le concept de phénotype de la fragilité. Depuis les définitions, les échelles et outils de dépistage se multiplient à travers un grand nombre d'études. (3) Le succès de la fragilité est compréhensible à travers la notion de réversibilité de cet état. La population est de plus en plus âgée et la nécessité de prévenir des évènements indésirables (hospitalisation, dépendance, mortalité) est devenue de plus en plus importante. (4)

Cependant les praticiens ont vus émerger une multiplication des définitions et des critères de fragilité ces 15 dernières années ce qui a apporté une confusion grandissante. Il est nécessaire de trouver une définition et des critères qui soient l'objet d'un consensus. (5,6) Les 2 classes de critères de fragilité les plus reconnues sont celle de Fried, le phénotype de fragilité (2), et la fragilité multidimensionnelle (Rockwood). (7) Ces 2 conceptions de la fragilité n'ont jusqu'à présent jamais fait l'objet d'une tentative de consensus. Un consensus pour permettre la stabilisation du concept général de fragilité auprès des chercheurs et des cliniciens favorisant son utilisation dans la pratique courante. (6)

Le but de cette étude est de trouver les critères définissant la fragilité en se basant sur les critères présents dans les définitions préexistantes, réunies à partir d'une revue systématique de la littérature. (8) Cela permettra de proposer une éventuelle définition consensuelle.

METHODE :

Il s'agit d'une étude qualitative, se basant sur les données d'une revue de littérature systématique, et exploitant ces données par un codage selon la théorie ancrée (grounded theory).(9)

Récupération des données

Un travail préalable de revue de la littérature a servi de base afin établir une définition exhaustive de la fragilité à partir des différentes définitions préexistantes (8). Cette revue de systématique de la littérature suivait la méthode PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-analyses). (10)

Les articles sélectionnés dans cette étude étaient tous en rapport avec la fragilité. Ils avaient tous un résumé (abstract) avec une structure IMRAD (Introduction, Méthode, Résultat et Discussion). Ils possédaient tous le terme « fragilité » (frailty) dans leurs questions de recherche. Enfin, s'ils ne définissaient pas clairement la fragilité, ils étaient exclus. (11,12,13,14,15,16,17,18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33,34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49,50)

Toutes les définitions de la fragilité contenues dans ces articles étaient extraites et évaluées selon la théorie dont elles dépendaient. (8)

Codage des différents critères

Pour exploiter ces définitions un codage a été utilisé en faisant appel à une analyse thématique et des outils issus de la théorie ancrée. (9) Les définitions avaient composé le verbatim de ce codage. (Annexe 1) A partir du verbatim était réalisé un codage ouvert, dans lequel figurent tous les critères présents dans les définitions. Ces critères étaient réunis par groupe dans un codage axial. Enfin les codes axiaux étaient appariés dans un codage thématique. (Annexe 2) Ces thèmes étaient organisés en organigramme pour réaliser une définition.

Une couleur étaient attribuée à chaque code ouvert, vert quand le critère concernait la préfragilité (cause), rouge pour la post fragilité (conséquences) et noir/bleu si le critère ne prenait pas parti entre préfragilité et post fragilité. Certains critères ne correspondaient ni à une cause ni à une conséquence.

Exclusions

Des définitions sélectionnées ont été exclues dans cette étude car leur verbatim avait perdu en significativité avec l'absence de capacité à déterminer les caractéristiques de la fragilité.

D’autres définitions ont été exclues devant l’absence de critères pouvant être codé. (Annexe 2)

Organigrammes/définition

Pour la réalisation de la définition de la fragilité, fut instauré un organigramme sur le codage thématique. (Tableau 1) Néanmoins ce niveau de codage était potentiellement trop synthétique pour que la définition qui s’en dégagea fût assez précise. Des sous-organigrammes englobant les thèmes principaux avec leurs codages axiaux avaient été produits. Ces sous-organigrammes permettaient une définition plus précise et une meilleure mise en évidence des contradictions/oppositions entre les différents articles et définitions retenus. (Tableau 2 à 12)

RESULTAT :

Récupération des données :

La revue de littérature a retrouvé 40 articles correspondant aux critères convenus. De ces 40 articles furent issues 358 définitions. Parmi ces définitions en ont été exclu 10, soit par absence de sens, soit par absence de critères à coder. Comme par exemple pour la soixante-quatrième définition : « A person can be frail in one aspect of life but not another. » (13)

Codage :

A partir des 348 définitions intégrées comme verbatim, 209 critères différents ont été identifiés dans le codage ouvert. Dès la réalisation du codage ouvert est apparu l'existence une confusion entre les causes et les conséquences de la fragilité. De nombreux critères soit se présentaient comme une conséquence ou soit comme une cause de la fragilité selon les définitions/auteurs.

Ces 209 critères ont été appariés dans le codage axial, retrouvant 52 codes axiaux.

Enfin a été réalisé un codage thématique en regroupant les codes axiaux dans de grands thèmes. Le codage thématique comportait 14 grands thèmes.

Ces thèmes étaient : les conséquences potentielles, fonctionnel, classement, conditions / participe au développement de la fragilité, physique, sénescence/physiologie, pathologie, perte, descriptif, exclusion (différent de la fragilité), interactions avec l'environnement, évaluation, prévention/protection, organes/fonctions.

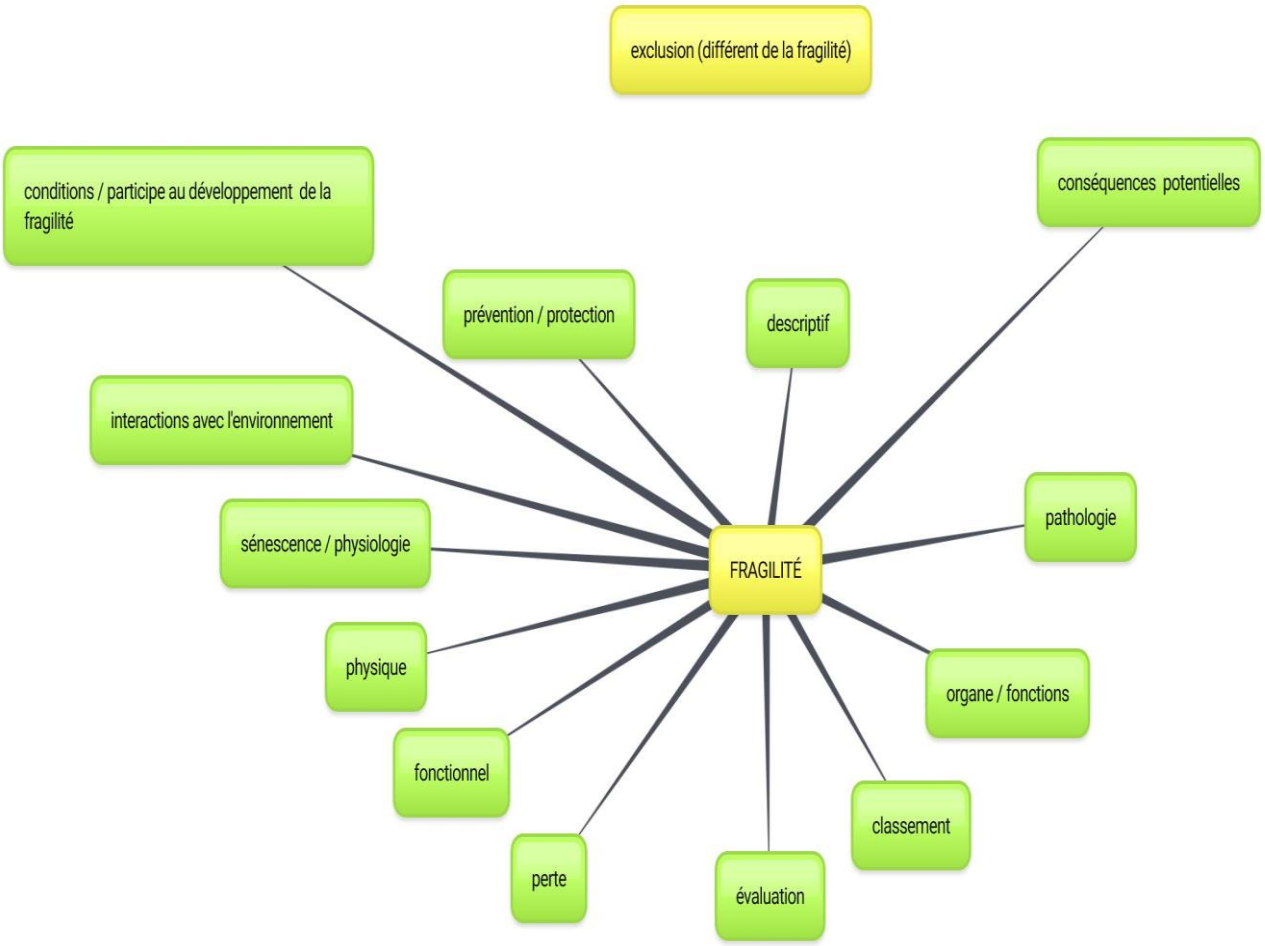
Organigramme thématique :

La fragilité a été représentée dans un organigramme, comme étant liée à tous ces thèmes en dehors de celui de l'exclusion (différent de la fragilité) **(tableau 1)** Ce Thème comportait le code axial : ce qui n'est pas la fragilité. Ce code contenait des critères comme : pas forcement liée à l'âge, opposée à la vitalité, différent de l'infirmité, n'affecte pas la réalisation de buts individuels, différent de la comorbidité, pas forcément liée au sexe ou au groupe ethnique, du fait des différences de composition physique, différent du vieillissement.

Pour une meilleure visibilité et une meilleure précision de la définition de la fragilité, on avait réalisé des organigrammes pour chaque thème reprenant les codes axiaux qui les composaient. Cela n'a pas été réalisé pour les codes ouverts qui étaient trop nombreux pour produire un organigramme lisible. **(Tableau 2 à 12)**

Il n'y avait pas de tableau pour le thème physique car il ne couvre qu'un seul code axial (critères physiques).

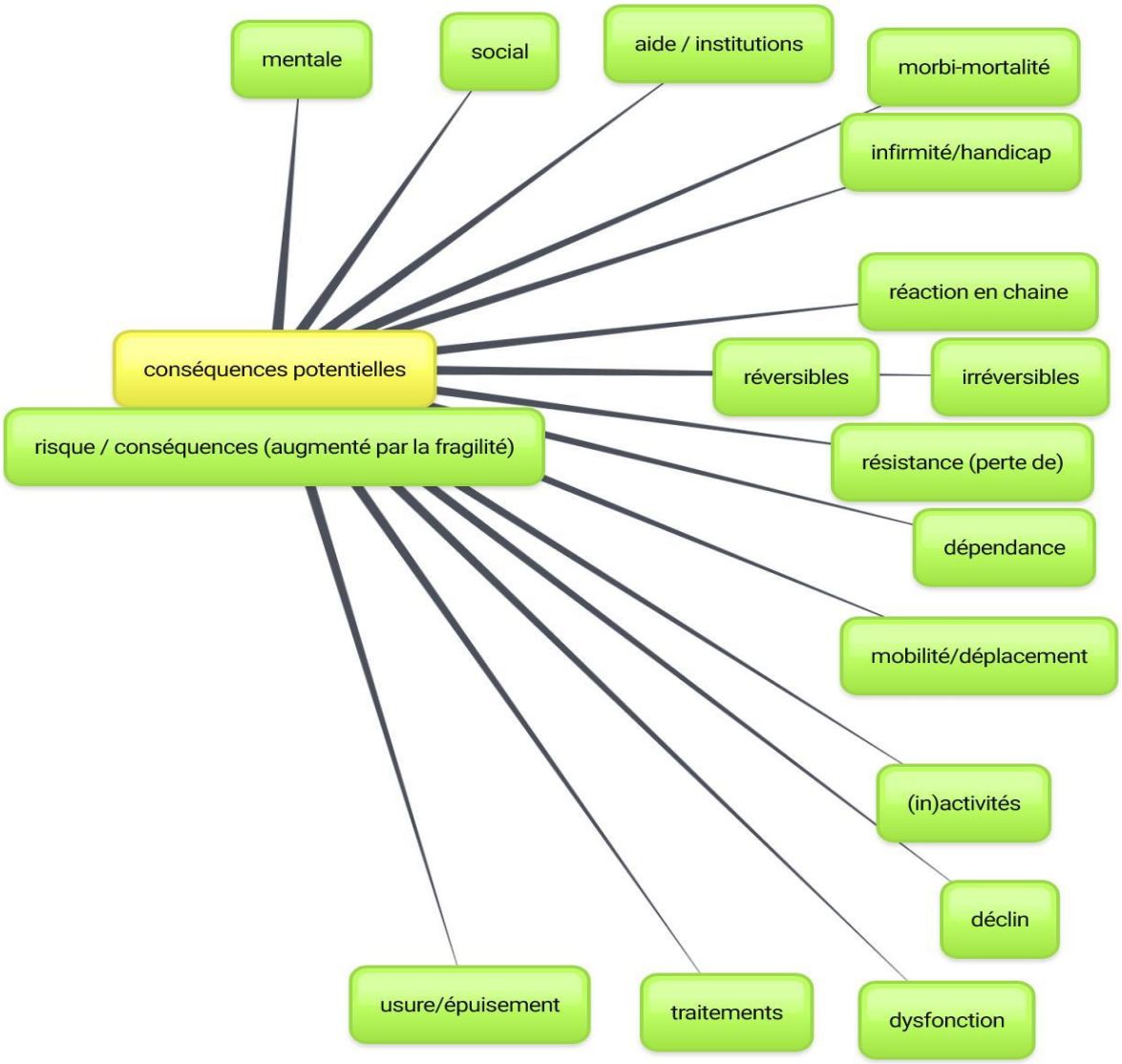
<u>Tableau 1 :</u> les thèmes de la fragilité



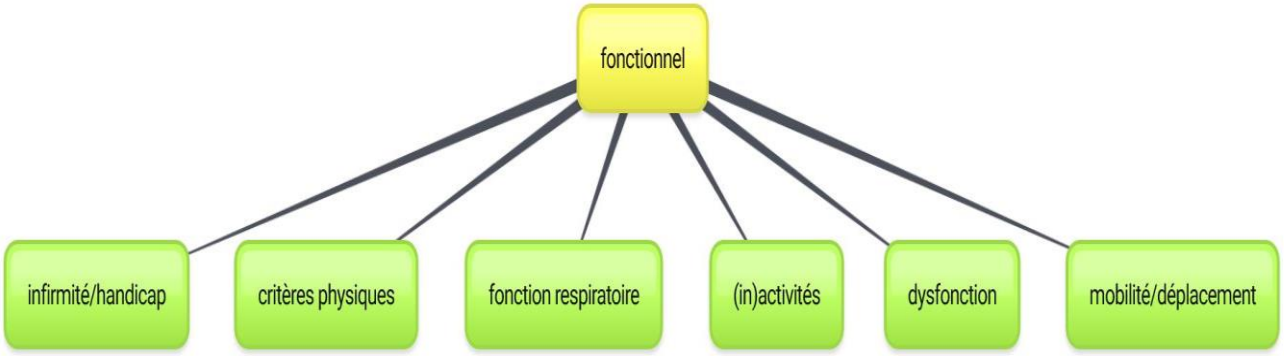
Organigrammes axiaux :

Dans les organigrammes suivants certains critères étaient présents sur des thèmes contradictoires comme les conditions et les conséquences.

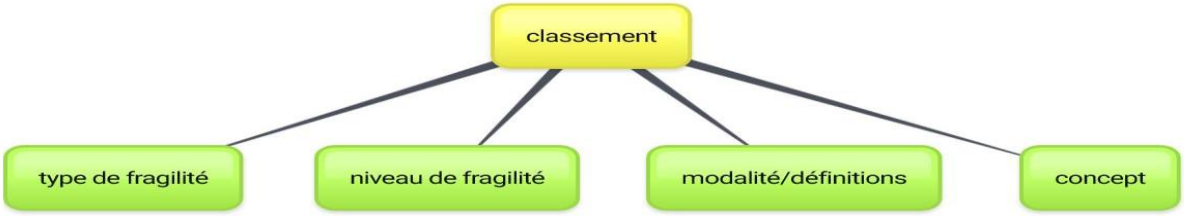
<u>Tableau 2 :</u> les conséquences de la fragilité



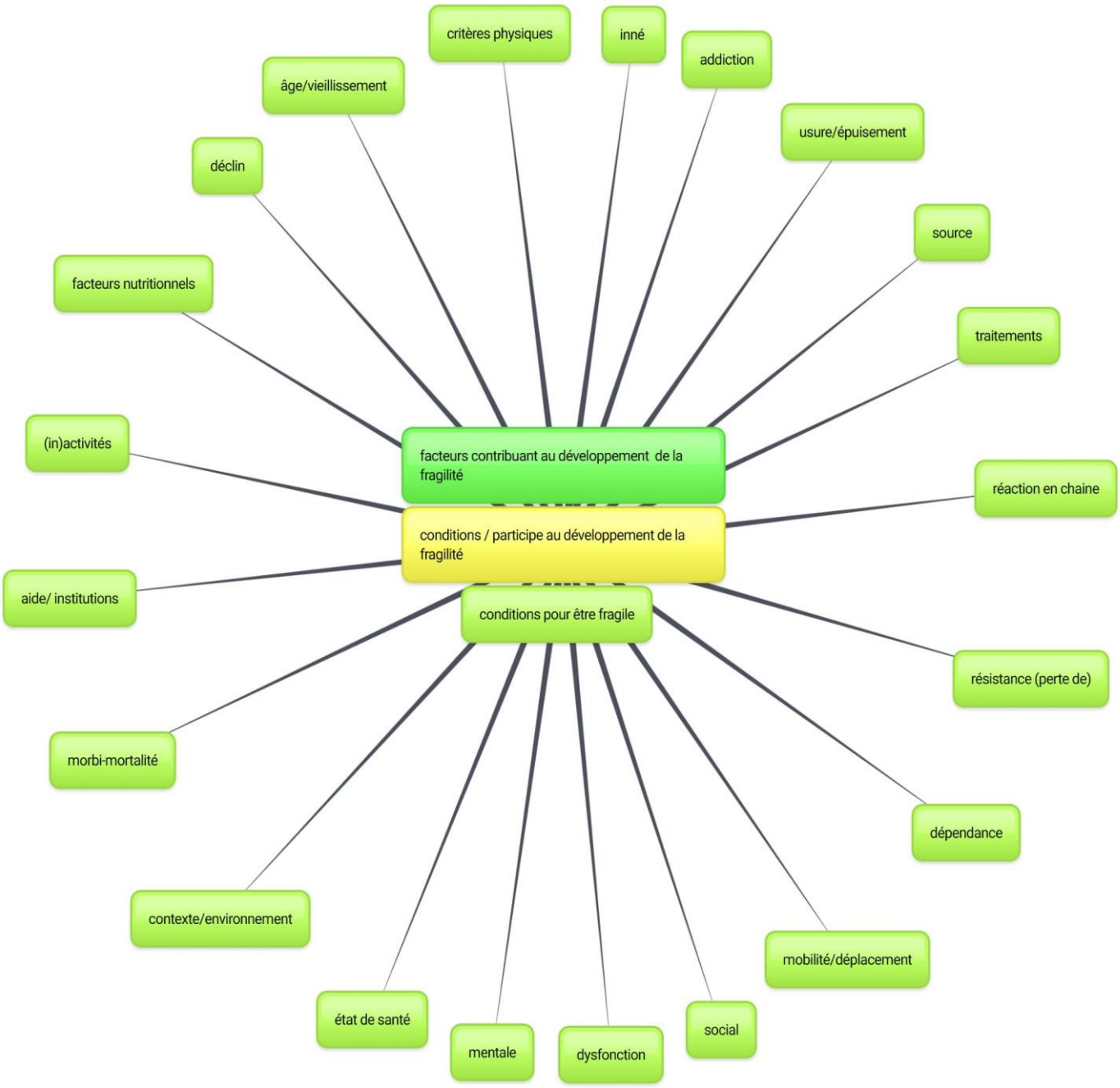
<u>Tableau 3</u> : fonctionnel



<u>Tableau 4 :</u> classement de la fragilité (ou au sein de la fragilité)

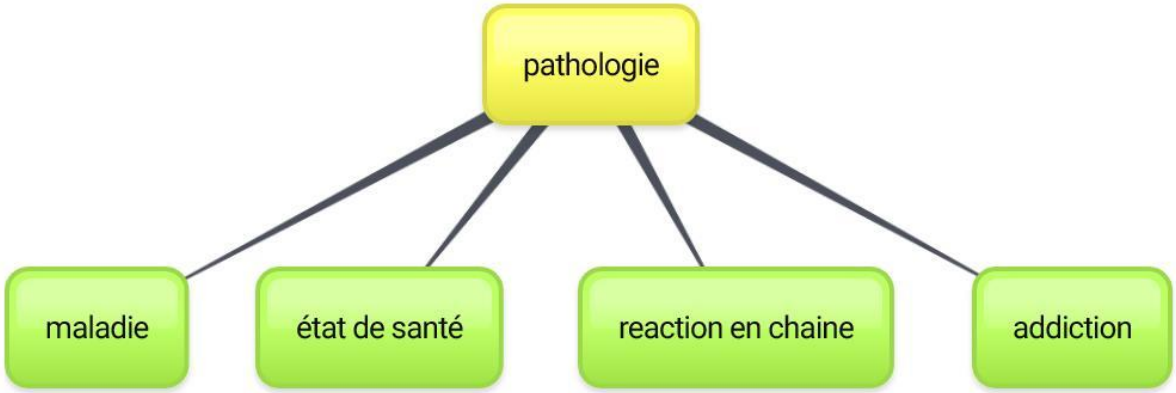


<u>Tableau 5 :</u> conditions / participation au développement de la fragilité

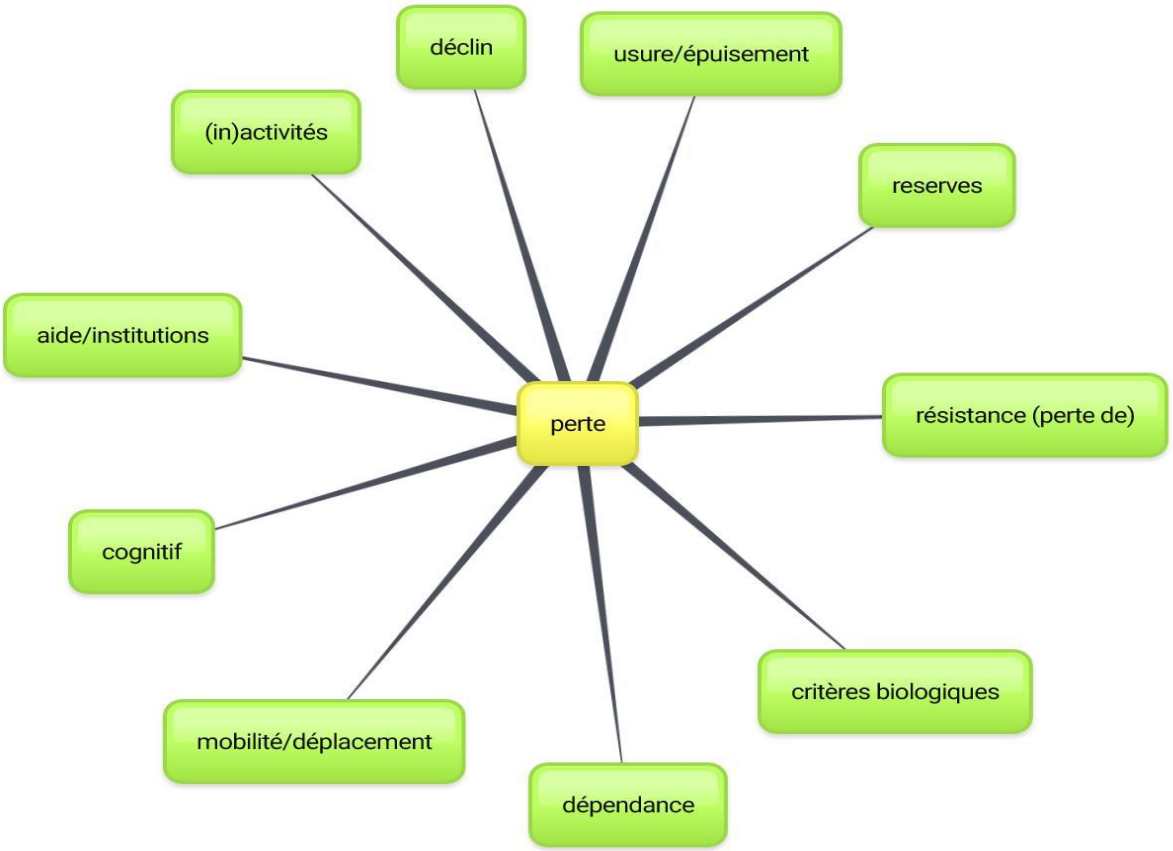


<u>Tableau 6 :</u> sénescence / physiologie dans la fragilité

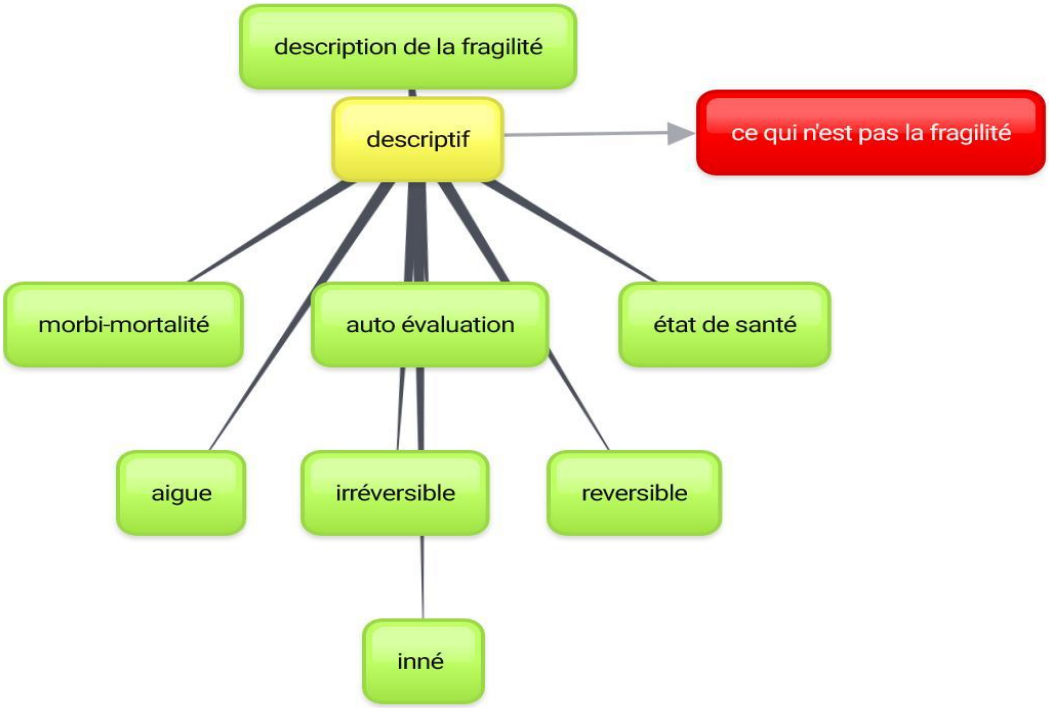
<u>Tableau 7 :</u> pathologie dans la fragilité



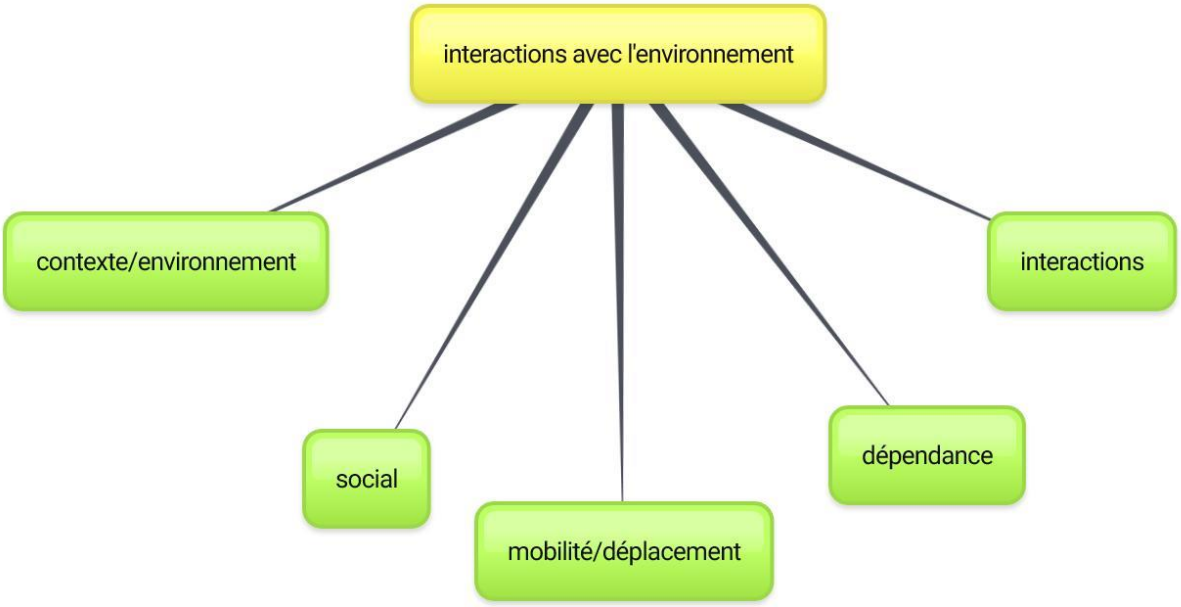
<u>Tableau 8 :</u> perte et fragilité



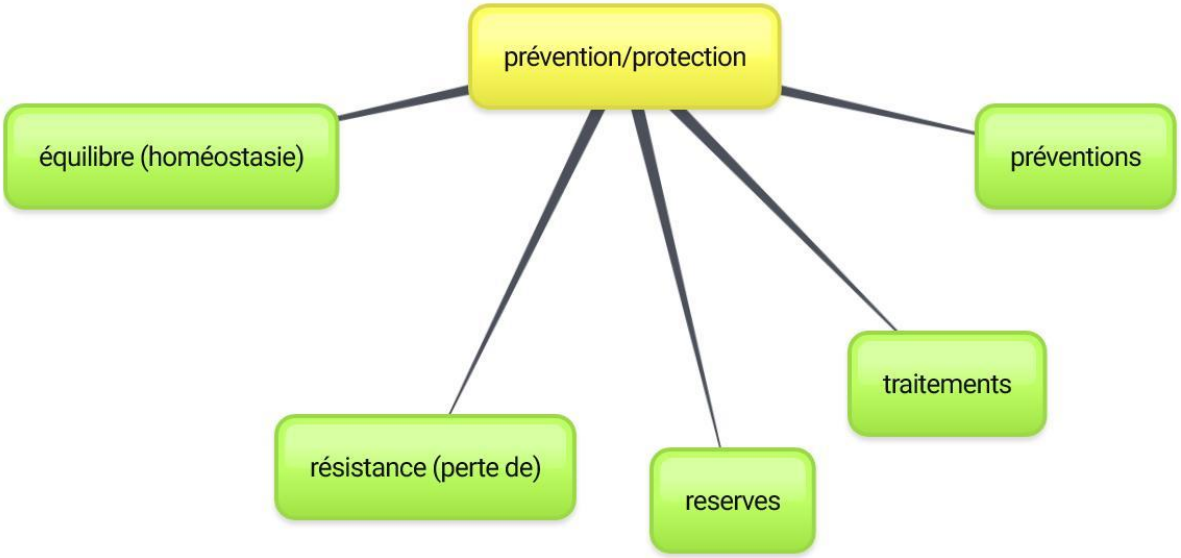
<u>Tableau 9 :</u> description de la fragilité



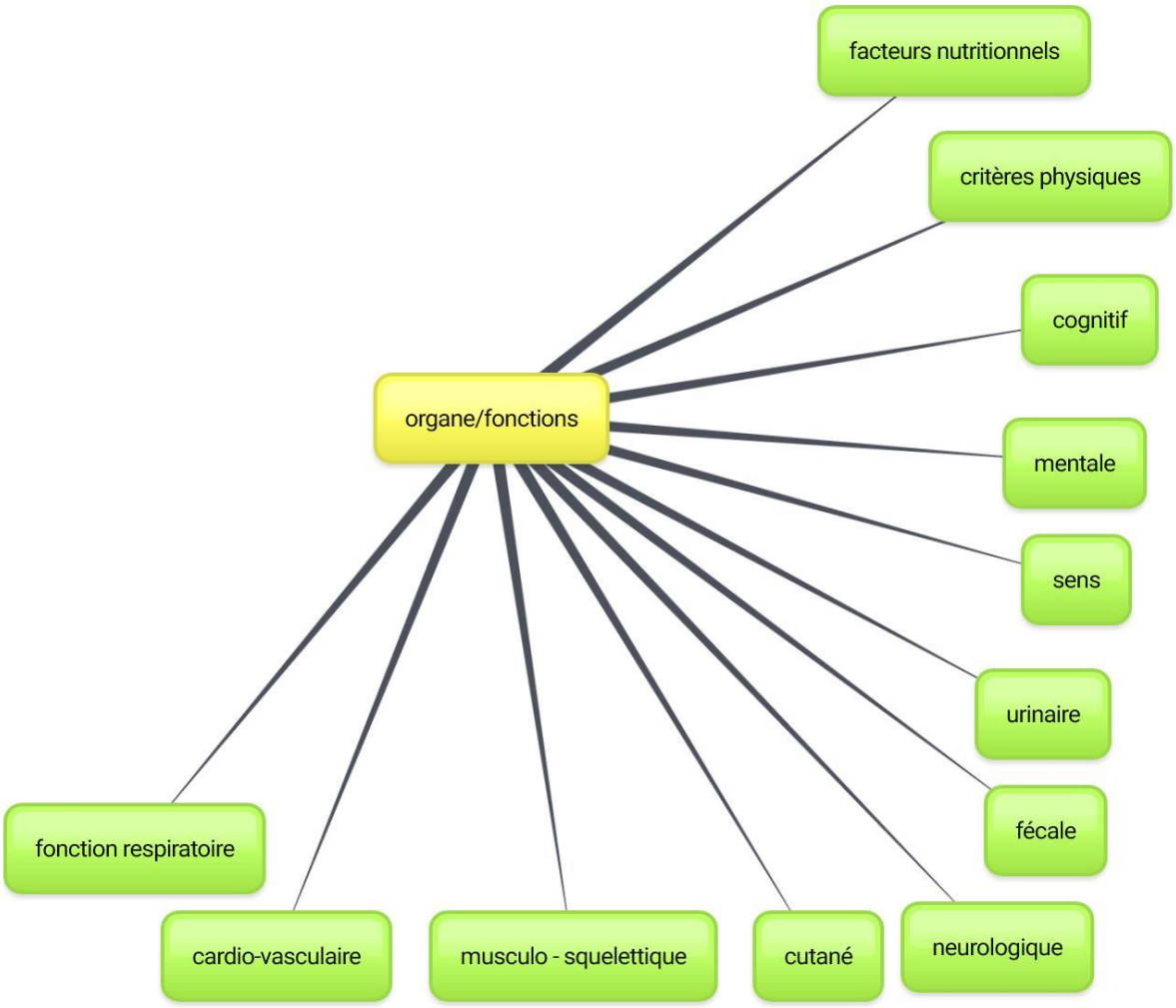
<u>Tableau 10</u> : interactions avec l'environnement



<u>Tableau 11</u> : prévention/protection



<u>Tableau 12 :</u> organe/ fonctions et fragilité



Critères consensuels :

Certains critères ne furent pas touchés par la confusion entre conditions et conséquences. En effet l'âge/vieillissement, les facteurs nutritionnels, l'addiction, l'environnement ont été cités comme des conditions. Pour les conséquences, il était plus difficile de citer des critères. Cela venait du fait que la fragilité s'inscrivait dans une réaction en chaine, dont la plupart des conséquences pouvaient aussi bien favoriser ou être une condition au développement de la fragilité. L'infirmité/ handicap a été souvent citée comme une conséquence. Pourtant le

principal code ouvert de ce critère était « le développement d'une infirmité » ou « disability » et celui-ci était clairement cité comme une conséquence (11) aussi bien que comme une condition selon les définitions. (19)

Critères non consensuels :

Certains critères souffraient de l'ambiguïté entre conséquences et conditions. Ils pouvaient aussi bien être cités comme condition que comme conséquence. Pour la plupart de ces critères il était possible de considérer les 2 possibilités. En effet leur grande diversité appuyait le fait que la fragilité pouvait s'exprimer comme un enchainement d'évènements, comme un cercle vicieux.

Parmi ces critères pouvait être cité : le déclin, l'usure/l'épuisement, l' (in)activité, la perte de résistance.

Définition :

La fragilité selon les définitions issues de la littérature était un concept comprenant différents types de fragilité (physique, mentale, sociale) et différents niveaux ou degrés.

La fragilité était un mécanisme physiopathologique avec d'une part la senescence et d'autre part la possibilité d'une participation de diverses pathologies.

La fragilité a été associée à une série de pertes qui pouvaient aussi bien être un élément déclencheur qu'un facteur de développement de la fragilité, de plus les pertes pouvaient aussi s'exprimer comme une conséquence, dans un cycle ou un continuum.

La fragilité pouvait être l'expression de l'interaction avec l'environnement. Cette interaction n'a pas été pour autant la seule source de condition pour l'apparition de la fragilité. Les conditions de la fragilité étaient des critères physiques, l'âge/le vieillissement, le déclin, les facteurs nutritionnels, l' (in)activité, les aides/institutionnalisations, la morbidité, le contexte/l'environnement, l'état de santé, le mental, des dysfonctionnements, le social, la mobilité/les déplacements, la dépendance, la perte de résistance, les réactions en chaines, les traitements, l'usure/ l'épuisement, l'addiction, l'inné.

La fragilité a eu pour conséquences l'infirmité/le handicap, le déclin, l' (in)activité, les aides/institutionnalisations, la morbi-mortalité, la dégradation de l'état de santé y compris mentale, des dysfonctionnements, la dégradation de la vie sociale, de la mobilité/ des déplacements, la dépendance, la perte de résistance, les réactions en chaines, les traitements, l'usure/l'épuisement.

La redondance entre conditions et conséquences de la fragilité était due à l'enchainement de pertes comme dit précédemment et cela exprimait que l'état de fragilité a été perçu comme une spirale de déclin, un cercle vicieux par certains chercheurs.

DISCUSSION :

Contexte :

Cette étude utilisait des définitions très diverses. La grande majorité d'entre elles se basait sur une des deux classes de critères. (5) Pour mémoire, ces 2 classes étaient la physiopathologie énergétique et motrice, autrement appelée phénotype de la fragilité, et la fragilité multidimensionnelle.

Concernant le phénotype de fragilité, il a été utilisé par un grand nombre d'études se basant sur la définition proposée par la Cardiovascular Health Study (CHS) proposée par Fried. (2,17,21,23,24,25,26,31,35,37,49) Cette définition comportait un index de fragilité avec 5 critères : la perte de poids, la lenteur de déplacement, la sensation de fatigue, la faiblesse musculaire et la sédentarité. (2) La présence de 3 critères permettait de dire qu'un patient était fragile.

Une version simplifiée était présente dans The Study of Osteoporotic Fractures (SOF) (51), il n'y avait plus que 3 critères et la présence de 2 d'entre eux était suffisante pour dépister la fragilité. Ces critères étaient la perte de poids, l'impossibilité de se lever d'une chaise à 5 reprises sans utiliser ses membres supérieurs, un bas niveau d'énergie. (22)

Concernant la fragilité multidimensionnelle ou théorie de l'accumulation des déficits de Rockwood, elle utilisait un index de fragilité mis en place dans the Canadian Study of Health and Aging (CSHA). (20) Le dépistage de la fragilité se basait ici sur une liste de 70 déficits.

L'accumulation de nouvelle études avait continué sans pour autant qu'il y ait eu de consensus pour une définition ou un outil de mesure commun. (52, 53,54) Les théories de l'accumulation des déficits et du phénotype de la fragilité avaient toutes les 2 des avantages et des inconvénients. Le vieillissement de la population et les répercussions sur les systèmes de soins rendant souhaitable qu'un consensus fut trouvé. (55)

Apports de l'étude :

Cette étude a permis de visualiser que certains critères étaient communs à la pluparts des études. Ces critères pourraient servir de base pour une définition consensuelle de la fragilité. Les 2 principales classes de critères ne semblaient pas antinomiques.

L'étude des critères a montré que beaucoup de critères non consensuels étaient généralement compris dans la confusion entre causes et conséquences. (56) Il était tout à fait probable que le caractère cyclique des réactions en chaines mises en jeu dans la fragilité fut responsable de cette confusion. Il était intéressant d'avoir identifié ces critères pour définir au mieux la fragilité. Pour obtenir un accord le plus large possible, sur le plus grand nombre de critères pour forger les outils de dépistage et de prévention qui fassent consensus.

Les limites de l'étude :

Pour cette étude, la récupération des définitions extraites de la revue de littérature (8) exposait aux limites de cette première étude. Certaines définitions avaient pu être oubliées, apportant un biais de sélection et un biais d'évaluation. Aussi dans la plupart des études se basant sur des cohortes, les patients en institutions étaient exclus. Les personnes en institutions représentaient pourtant une grande proportion chez les patients fragiles.

Dans les cohortes se posait également le problème de la limite d'âge, des patients jeunes avaient été inclus et ce qui pouvait influencer les résultats.

Les définitions retenues avaient moins de 20 ans. Pourtant la fragilité fut citée depuis les années 80, cela s'expliquait par l'absence de nécessité de définir la fragilité avant que Fried n'ai introduit le phénotype de la fragilité. (2)

Dans cette étude les critères les plus répétés n'ont pas été mis en valeur car l'étude n'était pas quantitative. Cela évita la mise en valeur des 5 critères de l'index de fragilité de la CHS, qui étaient très cités.

La traduction des définitions depuis l'anglais et l'espagnol et l'attribution des codages étaient le travail d'une seule personne et comportaient un risque d'erreur linguistique et de subjectivité

dans le regroupement des critères sur les 3 niveaux de codage. Il y avait nécessité pour renforcer l'objectivité d'effectuer ce type de travail en binôme ou en groupe.

Une contre étude pourrait éventuellement être menée pour vérifier si les critères obtenus sont similaires.

CONCLUSION

La fragilité a continué d'être étudiée sans définition commune. Cette étude a montré la grande pluralité de définitions et de critères, ainsi que le grand nombre de critères contradictoires selon les définitions et auteurs. Cependant certains critères firent consensus dans les différents courants utilisés. De même les critères contradictoires étaient, en partie, potentiellement intégrables à une définition commune.

Les 2 approches principales, la fragilité multidimensionnelle ou continuum de déficit (Rockwood) et le phénotype de la fragilité (Fried) n'étaient pas opposées, mais il n'y avait pas eu de tentative de recherche de consensus. Il apparaissait d'autant plus nécessaire d'y parvenir. (55) Pour cela il était nécessaire d'arrêter de produire de nouvelles recherches utilisant de nouvelles définitions apportant toujours plus de confusions. L'intérêt de la fragilité résidait dans son dépistage et plus les définitions seront confuses, plus les échelles/outils de mesure seront complexe et moins ce concept sera exploitable en pratique. La stabilisation du concept de fragilité devrait être une priorité pour les chercheurs afin d'en permettre une utilisation plus courante par les cliniciens. (6)

Les futures recherches dans ce domaine pourraient se concentrer sur une définition et des outils consensuels. Dans ce sens une nouvelle étude comparant les critères présents dans les outils et index de fragilité pourrait elle aussi aider à aboutir à une définition commune.

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Annexe 1 : Définitions et critères (classé par ordre chonologique)

→ *A program to prevent functional decline in physically frail, elderly persons who live at home* (The New England Journal of Medicine, 2002)

1) Physical frailty was defined according to the results of two tests of physical abilities that are strongly associated with the development and progression of disability. Persons were considered physically frail if they required more than 10 seconds to perform a rapid-gait test (i.e. to walk along a 10-ft [3.0m] course and back as quickly as possible) or if they could not stand up from a seated position in a hardback chair with their arms folded. Persons meeting one of these criteria were considered moderately frail, and those meeting both criteria were considered severely frail.

2) […] Criteria for physical frailty identified elderly persons with substantial impairments in physical abilities and hence with high projected rates of disability and functional decline.

→ *Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial* (The American Geriatrics Society, 2002)

1) […] Mild to moderate physical frailty, as defined by two of the following three criteria: Modified Physical Performance Test (modified PPT) score between 18 and 32, peak oxygen uptake (VO2 peak) between 10 and 18 mL/kg/min, and self-report of difficulty or assistance with one basic activity of daily living (ADL),or two instrumental ADLs.

2) Physical frailty is a syndrome characterized by declines in multiple physiological domains, including muscle mass and strength, flexibility, balance and neuromuscular coordination, an cardiovascular function. In addition to aging per se, factors that contribute to the development of frailty include chronic illnesses, poor nutrition, and physical inactivity. Frailty greatly increases the risk for functionnal decline, instutionalization, morbidity, and mortality.

3) […] Mildly to moderately frail older people retain the ability to adapt to endurance training with functionally significant increases in VO2 peak.

4) […] Frail older people retain the capacity to adapt to weightlifting with significant increases in strength.

5) […] Frail older people are able to perform and adapt to whole-body programs of strength training involving a variety of exercises and all major muscle groups.

→ *Conceptualizations of frailty in relation to older adults* (Journal of Advanced Nursing, 2003)

1) […] A new theoretical approach to the concept of frailty in older adults: (1) it must be a multidimensional concept that considers the complex interplay of physical, psychological, social and environmental factors; (2) the concept must not be age-related, suggesting a negative and stereotypical view of ageing; (3) the concept must take into account an individual's context and incorporate subjective perceptions; (4) the concept must take into account the contribution of both individual and environmental factors.

2) […] Frailty was defined as impairment in one or more aspects of the activities of daily living or cognitive impairment or poor self rated health.

3) […] Frail elders at risk for increasing morbidity, acute hospital and long-term care use and death.

4) […] frailty has been considered when there are indications of: (1) functional impairment and dependence on others for activities of daily living that threaten the ability of a person to live independently in the community, (2) poor physical health, such as chronic illness or acute illnesses, (3) disability, (4) vulnerability or lack of strength and resilience, (5) poor mental health functioning; for example, cognitive impairment or depression, (6) requiring formal, informal, or long-term care to meet basic needs, and (7) simply old age.

5) Demographers use the term frailty in mathematical modelling of morbidity and mortality to denote a latent variable associated with extent of risk.

6) […] Biomedical perspective, equating frailty with ageing, disease, decline, loss and dependence on others.

7) […] Frailty as poor functioning in physical, cognitive, emotional, sensory or social functioning.

8) It has been subdivided into types including 'medical frailty', 'functional frailty', 'mental frailty', and 'physical frailty', implying that there is just one type of characteristic by which an individual is evaluated for frailty.

9) Aging.

10) Reduced physiological reserves.

11) Decreased muscle strength, mobility and balance.

12) Decreased strength, flexibility, cardiovascular endurance and body composition.

13) Compromised homeostatic mechanisms.

14) Feebleness, delicately constituted, vulnerable or lack of resilience.

15) Disability.

16) Inactivity combined with weight loss.

17) Functional impairment and dependence in activities of daily living.

18) Chronic and disabling illness.

19) Acute illnesses such as confusion, falls, immobility, incontinence, and pressure sores.

20) Poor mental health functioning, such as cognitive impairment and depression.

21) Need for formal or informal assistance with personal care or household tasks.

22) Specialized geriatric intervention and long-term (nursing home) care.

23) Failure to thrive.

24) Biologically old.

25) Wasting syndrome common in people of advanced age.

26) Chronically dependent in a variety of ways.

27) Functional disability.

28) Functional dependency.

29) Decreased ability to respond to stressful situations.

30) Fragile, delicate, brittle, tender, easily disturbed.

31) Functionally vulnerable.

32) Chronic illness and disability.

33) Feebleness and general vulnerability.

34) External stressors that can precipitate frailty but are also essential for maintenance of function.

35) Frailty results from a loss o a person's capability to withstand environmental stressors related to diminished physiologic reserves beyond a threshold limit. Reserve capacities reduced by disease, disuse, illness and age.

36) Frailty is a precursor to disability or unstable disability.

37) The process of becoming frail consists of a series of episodic, progressive and irreversible losses.

38) Frailty results from the dysfunction of tissue secondary to non-optimal energy flow because of disuse, aging and disease leading to a threshold loss of physiologic function.

39) Frailty is defined as opposite to vitality along a continuum. Frailty is reversible through the reestablishment of optimal energy flow.

40) A person is considered frail if they have physiologic declines beyond a predefined threshold limit.

41) Frailty is defined as a cycle – a process of declining energetics, including muscle mass loss, falling metabolic rate, declining strength, energy expenditure and mobility.

42) The frail elderly are those persons for whom the deficits outweigh the assets, so these people can no longer maintain their independence in the community.

43) Dynamic process with interacting factors resulting in different degrees of frailty characterized by different levels of dependence on others.

44) Frailty occurs when there is diminished ability to carry out the important practical and social activities of daily living. Reserve capacity contributes to a person's position on the frail hardiness continuum, but, by itself is sufficient to determine frailty.

45) Frailty is defined as opposite to hardiness along a continuum. The position on the continuum depends on the complex interaction among personal and environmental factors.

46) Frailty reflects a societal view of aging as a battle between independence and dependence.

47) Frailty is socially produced through the interaction of older adults, their caregivers and their health providers.

48) Frailty is a quality and a dynamic adaptational process on the part of elderly persons, families, and health care personnel.

49) […] Frailty is unidimensional and is characterized by functional losses that influence the capacity for independence in daily living.

50) […] Frail elders as those who are unable to fulfill social roles and perform activities of daily living.

51) […] Dependence on others is a sufficient condition for frailty.

52) […] Frailty as consisting of the physiological dimensions of musculoskeletal function, aerobic capacity, cognitive and nutritional states.

53) […] Failty is more a reflection of a disease or physiological state than a statement of need.

54) While the majority of models have viewed frailty as including primarily biomedical and objective dimensions, others have gone beyond this by incorporating psychological and/or social dimensions.

55) […] A person can be frail in one aspect of life but not another.

56) The problem of frailty is viewed as a medical problem that falls to the medical community to identify and treat refers to this as the medicalization paradigm.

57) The presence of frailty may result from the presence or absence of numerous intersecting factors, many of which are external to the individual, and are conditions occurring within the environment.

58) […] Frailty can be addressed by altering the characteristics of the external environment rather than focusing entirely on the individual.

59) It is a state of reduced physiological reserves associated with ageing that affects an individual's capacity for functional independence.

60) […] A model of breakdown among older people.

61) Frailty results from age-related physiological losses in combination with disease, disuse and illness;

62) […] Frailty as a syndrome that is age-related and common.

63) Frailty has age-specific connotations.

64) The literature has associated frailty with a lack of hope, absence of positive outlook […], and loss or declining abilities.

65) […] Frailty is a relative term suggests not thinking of people as either frail or not frail, but rather placing them on a continuum.

66) […] Different degrees of frailty suggests a vulnerable state in which an individual is at risk of becoming more or less frail over time.

67) [...] Definitions: (a) the degree of frailty is context dependent and, therefore, greatly affected by the subjective perceptions of individuals, (b) frailty is multidimensional and results from a complex interplay of physical, psychological, social and environmental factors, (c) frailty is not age-related and, therefore, does not portray a negative and stereotypical view of ageing, and (d) frailty can originate from within an individual or from conditions in the environment. What is needed is a 'fit' between the needs and resources of the person and the demands and resources of the environment.

→ *Selected as the best paper in the 1990s: Reducing frailty and falls in older persons: an investigation of tai chi and computerized balance training* (The American Geriatrics Society, 2003)

1) Frailty, defined as a reduction in physiological reserves and behavioral capacities, can affect individuals throughout the age continuum, but the consequences of frailty are particularly devastating for older persons.

2) […] Biomedical,functional, and psychosocial indicators of frailty.

→ *Operationalizing a frailty index from a standardized comprehensive geriatric assessment* (The American Geriatrics Society, 2004)

1) The construct of frailty appears to have a firm biological basis, and frailty is easily recognized clinically.

2) Frailty has been measured by constructing a frailty index (FI), based on the accumulation of a variety of functional deficits (such as comorbid illness, poor health attitudes, signs of disease, and self-reported disabilities).

3) […] Frailty is not the same as disability, as evidenced by the fact that not all disabled people are frail.

4) […] A vulnerable state of health, arising from the complex interaction of medical and social problems, resulting in a decreased ability to respond to stress, and associated with a decline in functional performance.

5) In general, frail people are more likely to be disabled.

6) Another way to conceptualize degrees of frailty in frail samples is to consider the relative degree of functional dependence.

7) Higher levels of frailty are associated with increasing risk of an adverse outcome of death or institutionalization.

8) […] The relationship between frailty and functional decline [...] follows the hierarchical pattern suggested by population studies but that frailty is more than just disability, as evidenced here by the combination of impairment, disability, and disease that constitute the index.

9) Frailty appears to operate analogously to macroscopic state variables (such as temperature measured by the summary of the average kinetic energy of the component molecules) in physical systems.

10) Although moderately and severely frail older adults are at a greater risk of adverse outcomes, frailty did not affect their ability to achieve individualized goals.

→ *Low nutrient intake is an essential component of frailty in older persons* (Journal of Gerontology: Medical Sciences, 2006)

1) Frailty is a syndrome associated with reduced functional reserve, impairment in multiple physiological systems, and reduced ability to regain physiological homeostasis after a stressful, destabilizing event.

2) Frail older persons are at high risk of accelerated physical and cognitive functional decline, disability, and death.

3) Fried and colleagues defined frailty as a vicious cycle connecting specific signs and symptoms.

4) […] A clinical syndrome characterized by three or more of the following criteria: low muscle strength, unintentional weight loss, feeling of exhaustion, poor physical performance, and reduced physical activity.

5) […] Inadequate dietary intake is a component of the syndrome, which may trigger and/or sustain the cascade of the other processes that lead to frailty.

6) Frailty was defined as having two or more of the following four criteria: 1) exhaustion [self-reported feeling that ‘‘everything I did was an effort,’’ at least three times a week in the last month.]; 2) low physical activity (sedentary state or performing light intensity physical activity [i.e., walking less than 1 hour/ week]); 3) poor muscle strength (grip strength in the lowest quintile, stratified by gender and body mass index [BMI] quartiles); and 4) low walking speed (time to walk 15 feet in the highest quintile, stratified by gender and standing height).

7) [...] Low intakes of vitamins E and C were associated with frailty, independent of protein and energy intake.

8) […] Association between low intake of vitamin D and frailty.

9) […] Poor nutritional intake is an important factor associated with the frailty syndrome.

10) A low intake of nutrients is associated with frailty even independent of energy intake.

11) A low intake of specific nutrients may contribute to the development of the frailty syndrome.

persons at an 12) Low intakes of energy and specific nutrients are associated with frailty. By using nutritional intake, it may be possible to target older early stage of frailty.

→ *Low serum micronutrient concentrations predict frailty among older women living in the community* (Journal of Gerontology: Medical Sciences, 2006)

1) Frailty is common in older adults and is considered a state of high vulnerability for adverse health outcomes, including disability, dependency, falls, need for long-term care, and mortality.

2) Frailty has sometimes been used synonymously with disability and comorbidity, however, mounting consensus indicates that frailty is a physiologically based condition with a clinical presentation that predicts disability and may result from comorbidity as well as multisystem physiologic dysregulation with aging.

3) Frailty was defined as a clinical syndrome based on having at least three of five criteria: unintentional weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.

4) A high prevalence of multiple micronutrient deficiencies occurs among frail women.

5) Women were categorized as frail or not frail according to a recent frailty phenotype (5) that was based on the presence of five characteristics: (i) unintentional weight loss (selfreported weight loss of 10 pounds or more in the prior year), (ii) self-reported exhaustion, (iii) weakness (measured grip strength in the lowest quintile at baseline), (iv) slow walking speed (the slowest quintile on test of timed walking speed), and (v) low level of physical activity (lowest quintile of physical activity scale). Women were defined as frail by the presence of at least three, and not frail if they had up to two of the five components.

6) Frail women were older ($p < .0001$), less educated ($p = .002$), had a higher prevalence of cardiovascular disease ($p < .0001$), and a higher proportion of frail women than nonfrail women had a BMI,18.5 kg/m2 ($p < .0001$).

7) A larger proportion of frail women reported fair or poor appetite compared with women who were not frail.

8) Frail women had lower serum concentrations of total carotenoids ($p = .006$), a-tocopherol ($p = .06$), 25-hydroxyvitamin D ($p < .0001$), selenium ($p < .0001$), and zinc ($p = .001$) at baseline compared with women who were not frail.

9) The incidence rates for frailty were higher for women in the lowest quartile of total carotenoids ($p = .04$) and a-tocopherol ($p = .04$).

10) Age ($p < .0001$) was associated with risk of becoming frail.

11) Current smoking, race, education, diabetes mellitus, cardiovascular disease, osteoarthritis, chronic pulmonary disease, and multivitamin use were not significantly related to incident frailty.

12) Women with no nutrient deficiencies had the lowest incidence rate of frailty, and the incidence of frailty increased with higher number of deficiencies.

13) The number of nutrient deficiencies was associated with the incidence of frailty […] after adjusting for age, smoking, and chronic pulmonary disease.

14) total carotenoids were associated with the incidence of frailty […], and a-tocopherol had a marginal association with the incidence of frailty.

15) Older women who had one or more indicators of poor micronutrient status had significantly higher risk of becoming frail.

16) Micronutrient deficiencies may be one major pathway by which women are at higher risk of becoming frail.

17) Frailty increases the risk for adverse outcomes, including hospitalizations and mortality.

18) Micronutrient malnutrition may play a role in the pathogenesis of frailty through different biological pathways.

19) Low serum carotenoid concentrations were predictive of frailty.

20) Low intake of fruits and vegetables may increase the risk of frailty through increased oxidative stress, inflammation, and sarcopenia.

→ *Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial* (Archives of Physical Medicine and Rehabilitation, 2006)

1) Frailty is commonly used in the context of elderly facing functional disabilities but the term is not a synonym for disability.

2) Frailty is related to instability and risk of loss of function.

3) A body-wide set of linked deteriorations including, but not confined to, musculoskeletal, cardiovascular, metabolic, and immunologic systems.

4) Frailty can be subdivided into various types, including medical, functional, mental, and physical frailty.

5) The phenotype concept introduced by Fried et al is operationalized by 5 indicators: unintentional weight loss, weakness, exhaustion, slowness, and low physical activity. […] Frailty is considered to be present if at least 3 indicators are positive and a pre-frailty status is defined with 1 or 2 positive indicators.This classification system has been shown to be predictive for falls, worsening mobility, worsening activity of daily living (ADL), disability, hospitalizations and death.

6) Exercise interventions may be effective in preventing, delaying, or reversing the frailty process.

7) The degree of frailty plays a role in the effectiveness of exercise programs that aim at fall prevention.

8) Frailty was defined as a clinical syndrome based on the presence of 3 or more indicators. When 1 or 2 indicators were present the subject was defined to be pre-frail and those with no indicator present were classified to be nonfrail.

→ *Factors contributing to frailty: literature review* (The Authors Journal Compilation, 2007)

1) Frailty is a multifaceted gerontological concept that lacks a clear definition, but may result from an identifiable homogeneous cluster of bio–psycho– social–spiritual factors.

2) Frailty, which increases morbidity, mortality, falls and the need for institutional care […], may cause an increased strain on all healthcare systems and family structures.

3) Frailty is most prevalent among the old, especially those who are 80 years of age or more.

4) By adversely affecting quality of life for the individual as well as family and friends, frailty diminishes independence in most activities of daily living.

5) Regardless of how frailty was defined, common contributing factors were identified. The three most commonly identified contributing factors were physical inactivity, ageing and disease.

6) Age and disease as the factors that contribute to frailty.

7) Nutritional frailty is an acute, dramatic reduction in appetite as well as food consumption.

8) Diminished energy flow (interaction) between the individual and their environment.

9) A state of muscular weakness and other secondary widely distributed losses in function and structure.

10) A diminished ability to carry out the important practical and social activities of daily living.

11) A state of reduced physiological reserve associated with increased susceptibility to disability.

12) A state of age-related physiologic vulnerability resulting from impaired homeostatic reserve and a reduced capacity of the organism to withstand stress.

13) Neuroendocrine dysregulation.

14) Immune dysfunction.

15) Is a mid-point between independence and pre-death.

16) Loss of adaptive capacity due to a loss of complexity.

17) A commonly used term indicating older persons at risk for morbidity and mortality.

18) Those in whom the assets maintaining health and the deficits threatening it are in precarious balance.

19) Deficits in the neurological, musculo-skeletal and energy metabolism systems.

20) Chronic under nutrition.

21) Sarcopenia / ↓Resting metabolic rate, ↓Walking speed, ↓Activity, ↓Total energy expenditure, ↓Strength and power ↓VO2max.

22) Difficulty with functional tasks.

23) Physical inactivity combined with either low energy intake, 5-year weight loss, or low BMI (Physical inactivity <210 min/week, low energy intake <7,6 MJ per day, 5 year weight-loss > 4 kg, Low BMI <23,5 kg/m²).

24) Frailty is diminished functioning combined with diminished self-rated health.

25) A wasting syndrome of older adults, characterized by weakness, fatigue, weight loss and extreme vulnerability to stressors, that predicts increased morbidity and mortality.

26) A combination of deficits or conditions that arise with increasing age and contribute to making the elderly person more vulnerable to changes in the surroundings and to stress.

27) A syndrome involving deficiencies in two or more domains involving physical, nutritive, cognitive and sensory capabilities.

28) Disability with one or more IADLs measured by the Instrumental Activities of Daily Living scale.

29) Theory and research clearly identifies inactivity leading to musculo-skeletal weakness as a major contributor to frailty.

30) Disease is a strong contributor to frailty.

31) Ageing was a predictor of frailty.

32) Cognition as a factor contributing to frailty.

33) Contribution of malnutrition to frailty.

34) Frailty was defined as a strictly physical syndrome, as functional difficulty, as a combination of functional impairment and poor self-rated health and as a syndrome involving dysfunction in a broad spectrum of domains.

35) Spirituality as a factor contributing to frailty.

36) The idea of reserve capacity is present in almost all theoretical or conceptual definitions of frailty.

37) Reserve capacity is needed in the musculoskeletal, neurological, nutritional and aerobic systems if frailty is to be avoided.

38) Frailty is multi-dimensional and has a common cluster of contributing factors. The cluster, which includes physical, cognitive/psychological, socio-economic, nutritional and social factors, as well as disease and ageing, are a reflection of the bio–psycho–social–spiritual view of health.

→ *A comparison of two approaches to measuring frailty in elderly people* (Journal of Gerontology: Medical Sciences, 2007)

1) A specific phenotype, consisting of five items, any three of which mark a person as recognizably frail.

2) A frailty index (FI) based on a count of accumulated deficits.

3) The FI was developed using 70 deficits from the clinical examination (5,16). [...] Items included the presence and/or severity of current diseases, ability in activities of daily living (ADL), and physical signs from the clinical and neurological examinations.

4) Adverse outcomes occurred more commonly among people who were frail.

→ *Frailty in older men: prevalence, progression, and relationship with mortality* (The American Geriatrics Society, 2007)

1) Frailty was defined as three or more of the following: sarcopenia (low appendicular skeletal mass adjusted for height and body fat), weakness (grip strength), self-reported exhaustion, low activity level, and slow walking speed. Prefrail men met one or two criteria; robust men had none.

2) Frailty has been described as ‘‘an excess vulnerability to stressors, with reduced ability to maintain or regain homeostasis after a destabilizing event.’’

3) A conceptual framework for the syndrome of frailty as an accumulation of weight loss, sarcopenia (age-associated muscle loss), reduced muscular strength and power, slower walking speed, less physical activity, and poor endurance has been proposed.

4) A physical syndrome that is distinct from comorbidity and disability.

5) The CHS frailty definition comprises five domains of physical health: shrinking or sarcopenia, weakness, slowness, low energy or endurance, and low activity level. Individuals who had three or more of these components were considered frail, participants with one or two components were considered prefrail, and those with no components were considered robust.

6) Association between the CHS frailty definition of frailty and health status and mortality.

7) Association between frailty and mortality in older men.

8) Association between the CHS frailty definition and mortality is consistent across body mass index (BMI) categories of underweight, normal weight, overweight, and obese.

9) Obese women had the highest prevalence of frailty, and mean BMI was higher in frail women and lower in robust women.

10) A man was considered frail if three or more of the following five criteria were present: shrinking/sarcopenia,low activity, weakness, slowness, or low energy. […] Men who had one or two of the criteria were considered prefrail, whereas those with no criteria were considered robust.

11) Frail men were more likely to be older [...]; be unable to complete the chair stands or narrow walk, have poorer cognitive function […], have poorer self-rated health, and be more likely to report a history of falls than men who were prefrail or robust.

12) Frail men were also more likely to be unmarried and to be less educated.

13) Frail men were less likely to report walking for exercise and more likely to report a depressed mood and to have poorer selfrated health.

14) Additionally, frail men were more likely to be current smokers and more likely to currently abstain from alcohol.

15) Frail men were much more likely to report mobility limitations[…] and IADL limitations.

16) Frail men were shorter, weighed less, had lost more height since age 25, and had lower BMD (total hip and femoral neck).

17) Age-adjusted means were lower for frail men for leg power, and frail men had the worst cognitive function.

18) Frail men had lower dietary calcium and vitamin D intake.

19) The prevalence of frailty increased with age.

20) Frailty status also differed modestly according to racial background.

21) The prevalence of frailty differed according to BMI level.

22) Multivariate models show that frail men had approxinately twice the risk of mortality as robust men.

23) The relationship between frailty and mortality differed according to age […] and BMI category.

24) Frail men were older and had poorer cognitive function, worse performance on physical function tests, poorer self-rated health, and more mobility and IADL limitations than other men.

25) The association between frailty and mortality was stronger in younger (o80) than older men.

26) Prevalence of frailty is somewhat higher in normal and underweight men and somewhat higherin African-American and Asian men.

→ *Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women* (Archives of Internal Medicine, 2008)

1) Older persons characterized as frail have a higher risk of adverse health outcomes that is not entirely explained by advanced age, poorer functional status, or greater prevalence of comorbidities.

2) Fried et al, using data from the Cardiovascular Health Study (CHS), proposed a phenotype of frailty (CHS index) in which 3 or more of the following 5 components were present: unintentional weight loss, self-reported reduced energy level, reduced grip strength, slow walking speed, and low level of physical activity.

3) Frailty as defined by the CHS index was associated with an increased risk of falls, hospitalization, disability, and death.

4) A simple frailty index using 3 components: weight loss, the subject's inability to rise from a chair 5 times without using her arms, and reduced energy level (Study of Osteoporotic Fractures [SOF] index).

5) The use of the term frailty in clinical geriatric medicine typically describes the presence of multisystem impairment and increasing vulnerability.

→ *Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study* (Journal of Gerontology: Medical Sciences, 2008)

1) In geriatric medicine, the term ''frailty'' has been used to describe older adults who are physically vulnerable, weak, and lack physiological reserve.

2) A growing body of evidence suggests a relationship between inflammation and risk of disability, frailty, walking speed, and strength.

3) […] A diagnosis or disease that manifests as frailty (Parkinson disease, congestive heart failure, stroke, coronary heart disease [CHD], use of antidepressant medications).

4) Definition of the frailty phenotype in WHI was guided by the criteria used in the Cardiovascular Health Study and was strongly associated with future mortality, disability, hospitalization, and hip fracture among older women

5) Both obesity and comorbidity increased risk of frailty.

→ *Frailty in older Mexican-American and European-American adults: is there an ethnic disparity?* (The American Geriatrics Society, 2008)

1) Frailty was defined as three or more of five characteristics: slow walking speed, weak grip strength, low energy expenditure, self-reported exhaustion, and weight loss.

2) Frailty is a geriatric syndrome that places older adults at risk for adverse health outcomes, such as falls, worsening disability, institutionalization, and death.

3) Frailty was operationalized as the presence of three or more of the following characteristics: slowness (slowest quintile on a timed walk), weakness (weakest quintile for grip strength), low energy expenditure (lowest quintile for energy expenditure obtained from the Minnesota Leisure Time Questionnaire), weight loss (10 pounds unintentionally in the previous year), and exhaustion (by response to two questions on the Center for Epidemiologic Studies Depression Scale (CESD).

4) The findings of the current study raise the possibility that, because frailty characteristics are standardized to body composition characteristics that vary systematically according to ethnic group, analogous to body composition variation according to sex, it is possible that the higher prevalence of frailty observed in ethnic minority groups using conventional criteria may be related in large part to ethnic differences in body composition and thus may not truly represent vulnerability to stress and decline (i.e., frailty).

→ *Frailty among community-dwelling elderly people in France: the three-city study* (Journal of Gerontology: Medical Sciences, 2008)

1) Frailty has emerged as a condition associated with an increased risk of functional decline among the elderly population, which may be differentiated from aging, disability, and comorbidity

2) Frailty describes a state of vulnerability to the adverse effects of a variety of environmental stressors, expressed as an increased risk of accumulating health-related problems, hospitalization, need for long-term care, and death.

3) […] Frailty is increased vulnerability due to impairments in multiple, inter-related systems resulting in homeostatic reserve disturbance.

4) […]Frailty as a clinical syndrome defined as the combination of shrinking, weakness, exhaustion, low walking speed, and low physical activity.

5) […] Participants classified as frail were older […], more likely to be female […], and less educated […], and they reported more chronic diseases […], lower income […], and poorer self-reported health status.

6) […] The frail subgroup had a lower MMSE score […] and more depressive symptoms.

7) Disability for mobility, IADL, and ADL activities at baseline was also significantly more frequent.

8) The phenotype of frailty […] was an independent predictor of the incidence of disability for IADL and ADL and of hospitalization.

9) Frailty may represent one extreme of a health continuum, and the inconsistency of an ‘‘intermediate condition’’ in predicting middle-term adverse outcomes could be explained by the longer duration of this status before ‘‘true frailty’’ and its consequences manifest.

→ *Cognitive impairment improves the predictive validity of the phenotype of frailty for adverse health outcomes: the three-city study* (The American Geriatrics Society, 2009)

1) Frailty is considered in geriatrics to be a clinical syndrome characterized by decreased resilience and physiological reserves. It is generally associated with a greater risk of health-related problems, hospitalization, and death.

2) Frailty is present when at least three of the following five components are identified: weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.

3) Cognition has already been considered as a component of frailty, and it has been demonstrated that it is associated with adverse health outcomes.

4) Those classified as frail […] reported significantly more depressive symptoms and subjective cognitive complaints.

5) The frail subgroup showed worse performance on the IST *[Isaacs Set Test]* and MMSE tests *[Mini Mental State Examination]*.

6) Frail individuals with cognitive impairment have a higher risk of IADL and ADL disability and of incident hospitalization and dementia than subjects with none of these conditions.

7) The Interventions on Frailty Working Group has supported the consensus that criteria to define physical frailty should be based on the physiological domains most frequently cited in the frailty literature: mobility, muscle strength, motor processing, cognition, nutrition, endurance, and physical activity.

8) Considering that frailty is a heterogeneous concept, adding the criterion of cognitive impairment results in better identification of elderly persons with intrinsic vulnerability than when only the domains of physical function are considered.

9) It is generally believed that chronic inflammation plays a central role in the pathogenesis of frailty.

→ *Comparing models of frailty: the Health and Retirement Study* (The American Geriatrics Society, 2009)

1) Frailty has been an imprecise and variously defined term used to indicate that heterogeneous group of older adults who undergo decline and are especially vulnerable.

2) Strawbridge and colleagues conceived of frailty as ''a grouping of problems and losses of capability which make the individual more vulnerable to environmental challenge'' and proposed an early frailty model based on deficiencies in four domains of functioning (physical, nutritive, cognitive, and sensory). They developed this Functional Domains model of frailty in the Alameda County Study (ACS). The model was the first to combine deficits across these domains into a single measure.

3) Rockwood and colleagues developed a frailty index (FI) as a measure of deficit accumulation, that is, a measure of the cumulative burden of, for example, symptoms, diseases, conditions, and disability. They developed this Burden model of frailty in the Canadian Study of Health and Aging. In contrast to the Functional Domains model, the items that comprise the FI include but are not limited to conditions that are geriatric in nature.

4) Fried and colleagues postulated frailty to be a ''biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative declines across multiple physiologic systems,'' and defined a frailty phenotype in terms of five components present in a hypothesized cycle of frailty.
Two components are defined in terms of physical performance measures. They developed this Biologic Syndrome model of frailty in the Cardiovascular Health Study (CHS).14 The model was later replicated in the Women's Health and Aging Studies (WHAS) in women aged 70 to 79.

5) Respondents classified as frail generally were older; were more likely to be female, from a minority ethnic group, and unmarried; had less education and a lower net worth; and were more likely to live alone.

6) Frail respondents had greater prevalence of heart disease, lung disease, diabetes mellitus, and musculoskeletal disorders.

7) Frail respondents also had greater prevalences of chronic diseases and of ADL and IADL dependencies.

8) Frailty is theorized to be related to but distinct from disability.

→ *Validation and comparison of two frailty indexes: The MOBILIZE Boston Study* (The American Geriatrics Society, 2009)

1) This vulnerable population, referred to as frail, has been identified as older adults with an intrinsic vulnerability to stressors and high risk for decline and adverse healthrelated characteristics such as disability and comorbidity.

2) Frailty is a biological syndrome of low reserve and resistance to stressors resulting from cumulative declines across multiple physiological systems that cause vulnerability to adverse outcomes.

3) Fried et al. proposed a phenotype of frailty involving at least three of the following five components: unintentional weight loss, self-reported low energy level, weak grip strength, slow walking speed, and a low level of physical energy. Using a frailty index based on this phenotype, Fried et al. and other researchers have reported its association with falls, hospitalization, disability, and death.

4) Older age, greater number of chronic medical conditions, and worse self-reported health were associated with greater frailty.

5) Greater impairments inphysical […] and cognitive function […] were associated with greater frailty.

6) Frailty was associated with higher depression scores.

→ *A frailty index to predict the mortality risk in a population of senior Mexican adults* (BMC Geriatrics, 2009)

1) One approach, proposed by Fried et al, considers frailty a distinct clinical syndrome not synonymous with either co morbidity or disability. Under this perspective, frailty is present when an individual has three of the following criteria: unintentional weight loss (10 lbs in past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity. Additionally, an intermediate status (prefrailty) is also identified when the individual presents one or two of the above criteria.

2) The other approach, proposed by Mitnitski and Rockwood, considers frailty as a continuum of accumulation of deficits (symptoms, signs, diseases, and disabilities) that are combined in a frailty index score, reflecting the proportion of potential deficits present in a person.

3) Studies using Fried's frailty definition have found that frail older adults have lower muscular density and muscle mass and higher fat mass than non frail elderly.

→ *A frailty instrument for primary care: findings from the Survey of Health, Ageing and Retirement in Europe (SHARE)* (BMC Geriatrics, 2010)

1) Frailty is an emerging geriatric syndrome, and its associations include falls, disability, morbidity, mortality and excess healthcare costs from consultations, polypharmacy, hospitalisations and institutionalisations.

2) Frailty confers loss of independence, vulnerability and impairs the quality of life and psychological well-being of many older people.

3) Frailty is an entity recognised by clinicians, with multiple manifestations and with no single symptom being sufficient or essential in its presentation.

4) […] Frailty could have a gendered dimension and manifest differently in males and females.

5) […] Frailty is more about the biological age than the chronological age of individuals.

→ *Circulating 25-hydroxyvitamin D levels and frailty in older men: the osteoporotic fractures in men study* (The American Geriatrics Society, 2011)

1) […] Frailty (a term indicating multisystem impairment and expanding vulnerability).

2) […] Older individuals classified as frail have a higher risk of adverse outcomes, including disability, falls, fractures, and mortality.

3) Components of frailty such as weakness and slowness are potential sequelae of vitamin D deficiency.

4) […] Men with 25(OH)D levels less than 20.0ng/mL had greater odds o fgreater prevalent frailty status.

→ *Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review* (BMC Geriatrics, 2011)

1) Disability in Activities of Daily Living (ADL), [...], is an adverse outcome of frailty that places a high burden on frail individuals, care professionals and health care systems.

2) Frail elderly people have a higher risk of ADL disability compared to non-frail elderly people.

3) Various physical, cognitive, psychological, nutritional and social factors have been claimed to contribute to frailty.

4) A biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative decline across multiple physiologic systems, and causing vulnerability to adverse outcomes.

5) The frailty phenotype postulates that five indicators of physical functioning (unintentional weight loss, exhaustion, slow walking speed, low grip strength, and low physical activity) are related to each other in a cycle of frailty. A person with none of the indicators is robust, a person with 1 or 2 indicators is pre-frail, and a person with 3 or more indicators is frail. Elderly people who are frail according to the phenotype have a higher risk of disability.

6) […] Physical frailty indicators terms such as “grip strength”, “weight loss”, “balance”, “exhaustion”, “walking speed”, “gait”, “physical activity”.

7) A variety of physical frailty indicators was measured in the included studies: weight loss, exhaustion, gait speed/ walking speed/gait, muscle strength/ grip strength, physical activity, balance, lower extremity function, chair stand, 360° turn, bending over, foot taps, and hand signature.

8) Physical frailty indicators are predictors of ADL disability in communitydwelling elderly people aged 65 years and older.

→ *Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients* (Plos One, 2012)

1) Different conceptual definitions of frailty have been reported, i.e., phenotypic, accumulation of deficits, and multiple domain aggregate or multidimensional.

2) […] Frailty as a dynamic age-related condition of increased vulnerability characterized by declines across multiple physiologic systems and associated with an increased risk of negative outcomes, i.e., institutionalization and death.

3) Frailty was demonstrated to be the most common condition leading to death in older people.

4) Women demonstrated a significantly higher level of frailty than men.

5) […] A list of eight frailty risk factors that are mentioned to be of great importance to the concept of frailty were identified, including in the physical dimension: nutritional status, physical activity, mobility, strength and energy, in the psychological dimension: cognition and mood, and in the social dimension: lack of social contacts and social support.

6) […] Adverse outcomes traditionally linked to frailty such as falls or institutionalization.

→ *The frailty dilemma. Review of the predictive accuracy of major frailty scores* (European Journal of Internal Medicine, 2012)

1) Frailty is a consequence of biological changes related to aging and the occurrence of one or more chronic conditions and their complications including functional impairment. The chronic conditions most frequently associated with frailty are heart failure, renal impairment, stroke, osteoarthritis of hip and knee, and depression.

2) A consensus conference defined frailty as "a state of increased vulnerability to stressors due to agerelated decline in physiologic reserve across neuromuscular, metabolic, and immune systems".

3) […] Many operational definitions of frailty include alterations in mobility, strength, endurance, nutrition, and physical activity.

4) Frail individuals are at high risk for dependency, institutionalization, falls, injuries, hospitalization, slow recovery from any illness and mortality. They are therefore most in need of health care and community and informal support services.

5) They describe frailty 1) as resulting from the burden of multiple diseases and disabilities; 2) as a distinct biological entity resulting in a frailty phenotype; and 3) by the selection of vulnerable elderly people who are evaluated for the allocation of medical treatment and care.

6) […] Age as a major frailty risk factor.

7) […] Multi-morbidity or disabilities as a determining factor for frailty.

8) Most frail people do have chronic diseases, and there is a significant trend of increasing prevalence of frailty in persons with more diseases.

9) […] The presence of one or more functional disabilities as main frailty risk factor.

→ *Frailty transitions in the San Antonio Longitudinal Study of Aging* (The American Geriatrics Society, 2012)

1) Frailty has been hypothesized to be a geriatric syndrome that is recognized by clinicians and characterized by decreased resilience to stressors, causing increased risk for age-related complications and outcomes.

2) […] Defined as the presence of three or more of five characteristics: weight loss, exhaustion, low physical activity, weakness, and slowness.

3) Frail individuals have been shown to be at risk for adverse outcomes, such as falls, disability, institutionalization, and death.

4) […] Diabetes plays a pervasive role in frailty worsening.

5) […] Fasting hyperglycemia is associated with frailty in individuals without diabetes.

6) […] Associations between frailty and insulin resistance and diabetes.

7) Frailty has also been linked with other diseases, such as cardiovascular disease, congestive heart failure, peripheral vascular disease, and stroke.

8) Fewer years of education, a key indicator of SES *[socioeconomic status]* , is also a significant predictor of worsening in any individual frailty characteristic.

9) Low SES is associated with prevalent and incident frailty.

10) A potential mechanism explaining this low SES-frailty association is increased inflammation, which is thought to be a major physiologic alteration operant in frailty, and which may result from poorer nutritional status, less access to medical care, and higher prevalence of chronic disease among lower SES individuals.

11) Characteristics of the frailty phenotype include the domains of physical activity, muscle strength, and nutrition.

→ *The frailty index in Europeans: association with age and mortality* (Age and Ageing (Oxford Journals), 2012)

1) Frailty is a non-specific state of dysregulation in multiple physiological systems, vulnerability to stressors and increased risk of adverse outcomes.

2) Frailty increases with age, it is more related to the biological than the chronological age of individuals.

3) Grip strength […] was retained as it is known to be an important objective marker of frailty.

4) The relationship between frailty and mortality was independent of age and other covariates.

→ *Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational* Study (The American Geriatrics Society, 2012)

1) Frailty is characterized by a lack of physiological reserve, an increased vulnerability to stressors and a subsequent risk for adverse health outcomes.

2) […] frailty as a syndrome consisting of involuntary weight loss, exhaustion, low activity level, weakness, and slow gait.

3) Older frail adults are at increased risk for various adverse health outcomes, including disability, falls, fractures, hospitalizations, death, and depression.

4) A significantly higher proportion of frail elders experience depressive symptoms compared to nonfrail older adults.

5) Parkinson's disease […], which could manifest as frailty.

6) A strong association between depression and incident frailty in older adult women.

7) Both frailty and depression are associated with inactivity, weight loss, reduced physical activity, and exhaustion, in addition to negative long-term health consequences, such as physical disability, hospitalization, and mortality.

→ *Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double-blind, placebo-controlled trial* (Journal of the American Medical Directors Association (JAMDA), 2012)

1) Frailty is a geriatric syndrome of decreased reserves and resistance to stressors that increses the risk for adverse outcomes, such as the onset of disability, morbidity, and institutionalization.

2) An important and fundamental component of frailty is sarcopenia.

3) […] Elderly subjects who met the defined frailty criteria. These criteria have been reported t be highly predictive for falls, hospitalization, disability, and mortality.

→ *Comparison of frailty indicators based on clinical phenotype and the multiple deficit approach in predicting mortality and physical limitation* (The American Geriatrics Society, 2012)

1) Frailty represents a state of multisystem impairments that increases the risk of adverse outcomes such as disability, morbidity, dependence, and institutionalization. It may be viewed as a syndrome contributed to by physiological decline with aging; dysregulation of the endocrine, metabolic, and immune systems; and common age-related chronic diseases, representing a continuum from normal aging to a final state of disability and death.

2) […] Physical performance measure as an indicator of frailty.

→ *Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline* (Revista Española de Geriatría y Gerontología, 2012)

1) The following criteria wereassociated with frailty: age, respiratory diseases, arthritis, diabetes, sensory deficits, urinary and faecal incontinences, polypharmacy, hospitalization in the past year, functional impairment, cognitive declineand depressive symptoms.

2) [...] la fragilidad es un proceso caracterizadopor la disminución de las reservas fisiológicas y la resistencia que hace que los mayores pierdan capacidad de adaptación al estrésambiental y sean más vulnerables a efectos adversos de salud,tales como mortalidad, discapacidad y hospitalización.

3) El síndrome de fragilidad se evalúa mediante 5 criterios clínicos:pérdida de peso no intencional, debilidad muscular, baja energía, marcha lenta y escasa actividad física.

4) […] asociación entre el síndrome de fragilidad y la enfermedad de Alzheimer y otros encuentran que el síndrome de fragilidad puede constituir un factor de riesgo para la demencia.

5) Con respecto a la relación entre la fragilidad y la dependencia,los resultados muestran que ser frágil se asocia con dependencia para las ABVD; pero también, que fragilidad y dependenciason fenómenos independientes.

→ *Use of the Mini Nutritional Assessment to detect frailty in hospitalised older people* (The Journal of Nutrition, Health and Aging, 2012)

1) It is characterised by a general lack of strength and increased susceptibility to disease, and is associated with increased mortality and morbidity.

2) Frailty is also associated with an increased risk of adverse events occuring during hospitalization and functional decline post-hospitalization.

3) [..] Older people who are undernourished are more likely to be frail.

4) […] Undernutrition and frailty can contribute to each other.

5) […] Problems associated with frailty, including reduced muscle strength and falls risk.

6) Older women […] have higher levels of frailty.

7) […] Low cognition has been found to be associated with undernutrition and frailty in older people.

→ *The SHARE Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe predicts mortality similarly to a frailty index based on comprehensive geriatric assessment* (Geriatrics and Gerontology International, 2013)

1) Frailty in older adults is a key clinical concept characterized by dysregulation of multiple biological systems, accumulation of deficits, vulnerability to stressors and increased risk of adverse outcomes such as falls, disability, hospitalization, institutionalization and death.

2) According to the phenotypic approach, frailty is defined as a clinical syndrome in which three or more of the following criteria are present: unintentional weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.

3) Another way to operationalize frailty is by counting in an individual the number of deficits that he/she has accumulated from a given list (of usually 40 or more potential deficits). The number of counted deficits divided by the number of deficits considered results in a score called frailty index (FIx), which ranges from 0 (i.e. none of the deficits present) to 1 (i.e. all deficits present).

4) [..] The variables defining the frailty phenotype, which are based on biological theory (i.e. the cycle of frailty), are in fact a good 'summary' of the multiple system dysregulation that occurs in frailty, at least as far as mortality prediction goes.

→ *The predictive properties of frailty-rating scales in the acute medical unit* (Age and Ageing (Oxford Journals), 2013)

1) Frailty is a state of loss of resistance to external stressors leading to extreme vulnerability and subsequent decline.

2) In community populations, frailty is associated with an increased risk of functional decline, death, hospitalisation and worsening mobility.

→ *Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality* (The American Geriatrics Society, 2013)

1) Frailty is recognized as a multiply determined, increased vulnerability to a range of adverse health outcomes.

2) Frailty is associated with falls, cognitive impairment, disability, hospitalization, institutionalization, and death, as well as adverse responses to chemotherapy, surgical intervention, and after emergency department discharge.

3) Frailty was demonstrated to be the most common chronic condition leading to death in older adults when it was defined based on a modified frailty phenotype using data from comprehensive assessments.

4) […] Frailty as a biological syndrome resulting from cumulative decline across multiple physiological systems.

5) […] Frailty as a multidimensional risk state that can be measured more by the quantity than by the nature of health problems.

→ *Evaluation of the Groningen Frailty Indicator and the G8 questionnaire as screening tools for frailty in older patients with cancer* (Journal of Geriatric Oncology, 2013)

1) The core feature of frailty is increased vulnerability to stressors due to impairments in multiple, inter-related systems that lead to decline in homeostatic reserve and reseliency.

→ *High protein intake is associated with low prevalence of frailty among old Japanese women: a multicenter cross-sectional study* (Nutrition Journal, 2013)

1) Frailty is a geriatric syndrome operationally defined by Fried and colleagues as the presence of slowness, weakness, exhaustion, low physical activity, and unintentional weight loss.

2) […] People with frailty have higher risks of subsequent disability, falls, hospitalization, and death than those without frailty.

3) […] grip strength and gait speed, which are components of frailty.

4) A primary cause of frailty might be sarcopenia, the age-related loss of muscle mass and strength.

5) […] Protein intake has been inversely associated with frailty.

6) A history of chronic disease, including stroke, myocardial infarction, hypertension, diabetes, and chronic rheumatism, were considered to be factors which influenced the current state of frailty.

7) The frail group was significantly older, had a higher BMI, and included more current smokers and less alcohol drinkers.

8) Further, a higher proportion of subjects with frailty had a history of chronic disease and depression symptoms.

9) Low intake of total protein was significantly associated with frailty.

10) High intake of protein was associated with a lower risk of frailty.

11) The intake of total protein was inversely associated with frailty.

12) Vitamin E, vitamin C, and folate were also associated with frailty.

→ *Long-term mortality in frail elderly subjects with osteoarthritis* (Rheumatology (Oxford Journals), 2014)

1) Frailty is currently considered as primary or pre-clinical when the physiological state is not associated directly with a specific disease or when there is no substantial disability. In contrast, frailty is considered secondary or clinical when it is associated with a known co-morbidity and/or disability. The characteristics of clinical frailty include not only co-morbidity and disability, but also polypharmacotherapy and relative adverse drug reactions, hospitalization, health service utilization, age-associated sensory deficits and lack of social support. This condition is associated with higher long-term mortality alone and along with chronic diseases such as chronic heart failure and chronic obstructive pulmonary disease.

2) […] Frail elderly were considered as inactivity/low energy, inactivity/weight loss and inactivity/low BMI.

→ *Association between frailty and short- and long-term outcomes among critically ill patients: a multicentre prospective cohort study* (Canadian Medical Association Journal, 2014)

1) Frailty is a term widely used to describe a multidimensional syndrome characterized by the loss of physiologic and cognitive reserves that gives rise to heightened vulnerability to adverse outcomes.

2) Adverse events associated with frailty include incident falls, susceptibility to acute illness, perioperative complications, unplanned hospital admissions, disability, need for institutional care, and death.

3) Frailty has substantial implications for quality of life, functional autonomy and health services utilization.

4) Frail patients were older, were more likely to be female, had more comorbid disease and greater functional dependence, and tended to have fewer social supports.

5) Frailty was associated with significantly longer durations of stay in both ICU *[intensive care units]* and hospital.

6) After hospital discharge, frail patients had a greater rate of hospital re admission.

7) After hospital discharge, frail patients were less likely than nonfrail patients to be living at home independently.

8) Frailty is associated with high health service utilization, with most expenditures related to long-term care and in-patient care at the end of life.

→ *Macronutrients, diet quality, and frailty in older men* (Journal of Gerontology: Medical Sciences, 2014)

1) Frailty, a phenotype of multisystem impairment and expanding vulnerability, becomes more prevalent with increasing age.

2) Older persons characterized as frail have a higher risk of adverse health outcomes not entirely explained by advancing age, poorer functional status, and greater prevalence of comorbid conditions.

3) Frailty is defined by the presence of three or more of the following criteria: unintentional weight loss, poor endurance or energy, weakness, slow walking speed, and low physical activity.

4) Frail participants were on average less educated, less likely to be married, more likely to smoke, more likely to rate their health as fair/poor/very poor, and more likely to have multiple medical conditions.

5) Frail men were more likely to have a body mass index < 25 kg/m2. 6) […] Aassociation of overall diet quality (as assessed with a standard index) with frailty status.
→ *A comparison of four frailty models* (The American Geriatrics Society, 2014)
1) Frailty is a condition that places older persons at risk of poor outcomes when exposed to stressful events. 2) […] Frailty is a predictor of functional deterioration and mortality. 3) Frailty is not the same as disability.

Annexe 2 : codage

Theme ou codage sélectuf	Codes axiaux	codes ouverts	VERBATIM ID	verbatim ad integrum
1) conséquences potentielles (1 - 2 - 12 - 16 - 17 - 18 - 25 - 26 -28 - 30 - 32 - 37 - 38 - 39 - 40 - 45 - 47) 2) fonctionnel (2 - 6 - 9 - 16 - 26 - 30) 3) classement (3 - 5 - 8 - 11) 4) conditions / participe au développement de la fragilité (4 - 6 - 7 - 10 - 12 - 15 - 16 - 17 - 18 - 20 - 23 - 25 - 26 - 28 - 30 - 32 - 37 - 38 - 45 - 46 - 47 - 49 - 51) 5) physique (6) 14) organe / fonctions (6 - 9 - 15 - 21 - 25 - 27 - 33 - 34 - 35 - 42 - 48 - 50)	1) risque/conséquences (augmenté par la fragilité) (1-2 - 33 - 34 - 35 - 36 - 49 - 52 - 56 - 57 - 69 - 72 - 74 - 75 - 77 - 78 - 79 - 80 - 84 - 85 -86 - 87 - 117 - 126 - 142 - 148 - 152 -153 - 172 - 173 - 185 - 190 - 191 - 192 - 193 - 194 - 195 - 197 - 207 - 208) 2) infirmité/handicap (1-2 -11-12 - 47 - 72 - 75 - 86) 3) type de fragilité (3-7-8-13- 61 - 62 - 63 - 106) 4) conditions pour êtres fragile (4-5-6-9-10-15-16-17-18-19-20-47 - 48 - 50 - 51 - 52 - 53 - 54 - 55 - 66 - 68 - 70 - 71 - 82 - 83 - 84 - 87 - 96 - 97 - 128 - 129 - 133 - 134 -135 - 137 - 138- 139- 140 - 141 - 187 - 188 - 189) 5) niveau de fragilité (7-8-13-106 - 122 - 149) 6) critères physiques (4-5-6-10-15-16-17-18-19-20 - 32 - 56 - 67 - 75 - 111 - 128 - 159 - 167 - 168 - 170 - 187 - 188 - 189)	106) 1) risque d'une infirmité/handicap (disability) 2) associé à la progression/développement d'une infirmité 3) fragilité physique 4) lenteur de déplacement 5) plus de 10 secondes au "rapid-gait test" 6) ne pas pouvoir se lever d'une chaise sans les bras 7) fragilité modérée 8) fragilité sévère	1) A program to prevent functionnal decline in physically frail, elderly persons who live at home (The New England Journal of Medecine, 2002)	physical frailty was defined according to the results of two tests of physical abilities that are strongly associated with the development and progression of disability. Persons were considered physically frail if they required more than 10 seconds to perform a rapid-gait test (i.e. to walk along a 10-ft [3,0m] course and back as quickly as possible) or if they could not stand up from a seated position in a hardback chair with their arms folded. Persons meeting one of these criteria were considered moderately frail, and those meeting both criteria were considered severely frail.
1) 2) 3) 4) 5) 14) 6) sénescence / physiologie (7 - 12 - 16 - 21 - 23 - 28 - 30 - 31 - 36 - 37 - 38 - 43 - 44 - 51)	2) 3) 4) 6) 26) 7) âge / viellissement (9 - 29 - 80 - 83 - 108 - 172)	3) 9) personnes âgées 10) altération des capacités physiques 11) haut niveau d'infirmité 12) déclin physique avancé	1) A program to prevent functionnal decline in physically frail, elderly persons who live at home (The New England Journal of Medecine, 2002)	[...]Criteria for physical frailty identified elderly persons with substansial impairments in physical abilities and hence with high projected rates of disability and functional decline.
1) 2) 3) 4) 5) 14) 8) perte (12 - 16 - 17 - 21 - 30 - 32 - 36 - 37 - 43 - 47)	3) 4) 5) 6) 17) 8) modalité / définitions (14 - 41 - 45 - 60 - 65 -100 - 104 - 105 - 109 - 118 - 121 - 133) 9) fonction respiratoire (15 - 16 - 112 - 141 - 200)	3) 7) 48) 106) 13) fragilité moyenne 14) plusieurs critères 15) score du modified PPT entre 18 et 32 16) pic de prise d'oxygène (VO2) entre 10 et 18mL/kg/min 17) difficulté pour une activité de base de la vie quotidienne 18) besoin d'assistance pour une activité de base de la vie quotidienne (dépendance) 19) difficulté pour ADL instrumental 20) assistance pour ADL instrumental	2) Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial (The American Geriatrics Society, 2002)	[...]Mild to moderate physical frailty, as defined by two of the following three criteria: Modified Physical Performance Test (modified PPT) score between 18 and 32, peak oxygen uptake (VO2 peak) between 10 and 18 mL/kg/min, and self-report of difficulty or assistance with one basic activity of daily living (ADL), or two instrumental ADLs.

1) 2) 3) 4) 5) 6) 8) 14) 7) pathologie (14 - 23 - 38 - 49) 9) descriptif (13 - 18 - 19 - 22 - 23 - 24 - 39 - 40 - 51)	1) 3) 6) 7) 27) 10) facteurs contribuant au developpement de la fragilité (29 - 30 - 31 - 32 - 46 - 56 - 57 - 66 - 67 - 68 - 69 -71 - 72 - 73 -74 - 75 - 76 - 77 - 83 - 84 - 85 - 86 - 87 - 90 - 91 - 92 -93 - 94 - 95 - 96 - 101 - 102 - 103 - 108 - 123 - 128 - 129 - 130 - 131 - 132 - 139 - 140 - 141 - 143 - 145 - 146 - 148 - 151 - 158 - 160 - 162 - 163 - 164 - 165 - 166 - 167 - 168 - 169 - 170 - 171 - 173 - 176 - 177 - 178 - 179 - 180 - 181 - 182 - 183 - 184 - 190 - 191 - 192 - 193 - 194 - 196 - 197 - 198 - 199 - 200 - 202 - 206 - 208) 11) concept (21 - 41 - 45 - 100 -104 - 109 - 118 - 122 - 133 - 149 - 159) 12) déclin (22 - 23- 24 - 25 - 26 - 27 -28 - 33 - 47 - 50 - 54 - 57 - 66 -67 - 68 -71 - 87 - 92 - 93 - 94 - 95 - 97 - 101 - 102 - 103 - 110 - 136 - 137 - 138 - 139 - 148 - 157 - 169) 13) description de la fragilité (22 - 23 - 24 -25-26 - 27 - 28 - 42 - 43 - 44 - 47 - 48 - 50 - 51 - 52 -53 - 54 -58 - 59 - 66 - 67 - 68 - 69 - 87 - 88 - 89 - 92 - 93 - 94 - 95 - 97 - 98 - 99 - 110 - 113 - 114 - 116 - 133 - 159 - 205) 14) maladie (30 - 52 - 55 - 56 - 72 - 135 - 141 - 181 - 190 - 191 - 192 - 193 - 197 - 199 - 200) 15) facteurs nutritionnels (31 -71 - 77 - 84 - 96 - 99 - 101 - 130 - 131 - 132 - 136 - 137 - 138 - 139 - 143 - 158 -162 - 163 - 168 - 181 - 196 - 204 - 209) 16)(in)activités (32 - 75 - 79 - 91 -103 - 150 - 165) 17) aide / institutions (18 - 20 - 34 - 49 - 78 - 79 - 80 - 108 - 142 - 206) 18) morbi-mortalité (35 - 36 - 123 - 172)	3) 56) 21) syndrome 22) déclin dans plusieurs domaines physiologiques (déclin) 23) déclin de la masse musculaire 24) déclin de la force (musculaire) 25) déclin de la flexibilité (souplesse) 26) déclin de l'équilibre 27) déclin de la coordination neuromusculaire 28) déclin de la fonction cardiovasculaire 29) vieillissement 30) maladie chronique 31) malnutrition/dénutrition 32) inactivité physique (ou baisse de...) 33) augmente le risque de déclin fonctionnel 34) augmente le risque d'institutionnalisation 35) augmente le risque de morbidité 36) augmente le risque de mortalité	2) Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial (The American Geriatrics Society, 2002)	physical frailty is a syndrome characterized by declines in multiple physiological domains, including muscle mass and strengh, flexibility, balance and neuromuscular coordination, an cardiovascular function. In addition to aging per se, factors that contribute to the development of frailty include chronic illnesses, poor nutrition, and physical inactivity. Frailty greatly increases the risk for functionnal decline, instutionnalization, morbidity, and mortality.
			2) Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial (The American Geriatrics Society, 2002)	[...] Mildy to moderatly frail older people retain the ability to adapt to endurance training with functionnally significant increases in VO2 peak.
			2) Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial (The American Geriatrics Society, 2002)	[...] Frail older people retain the capacity to adapt to weightlifting with significant increases in strengh.

			2) Effects of exercise training on frailty in community-dwelling older adults: results of a randomized, controlled trial (The American Geriatrics Society, 2002)	[...] Frail older people are able to perform and adapt to whole-body programs of strengh training involving a variety of exercises and all major muscle groups.
3) 4) 6) 9) 10) exclusion (différent de la fragilité) (19) 11) interactions avec l'environnement (20 - 28 - 30 - 32 - 41)	4) 7) 8) 10) 11) 13) 19) Ce qui n'est pas la fragilité (43 - 98 - 124 - 127 - 161 - 174 - 175 - 201 - 203) 20) contexte / environnement (44 - 46 - 59 - 90 - 108 - 153 - 180 - 198)	9) 14) 41) un concept multidimensionnel (syndrome, risque) 42) relation complexe entre le physique, le psychologique, le sociale, et l'environnement 43) pas forcément lié à l'âge 44) contexte de l'individu 45) doit inclure une perception subjective 46) facteurs environnementaux	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] A new theoretical approach to the concept of frailty in older adults: (1) it must be a multidimensional concept that considers the complex interplay of physical, psychological, social, and environmental factors; (2) the concept must not be age-related, suggesting a negative and stereotypical view of ageing, (3) the concept must take into account an individual's context and incorporate subjective perceptions; (4) the concept must take into account the contribution of both individual and environmental factors.
1) 2) 4) 5) 6) 7) 8) 9) 14) 12) évaluation (22 - 29 - 36)	2) 4) 6) 12) 13) 26) 21) cognitif (47 - 73 - 134 - 178 - 179) 22) auto évaluation (48) 23) état de santé (48 - 51 - 55 - 56 - 61 -72 - 84 - 113 - 115 - 184 - 194 - 195 - 206 - 208)	10) 17) 47) altération des capacités cognitives 48) auto-évaluation d'une mauvaise santé	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty was defined as impairment in one or more aspects of the activities of daily living or cognitive impairment or poor self rated health.
1) 4) 6) 8) 9)	1) 4) 7) 17) 18)	9) 34) 35) 36) 142) 49) risque de nécessité de soins de longue durée	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frail elders at risk for increasing morbidity, acute hospital and long-term care use and death.
1) 2) 3) 4) 5) 6) 7) 8) 9) 14)	1) 2) 4) 6) 7) 8) 10) 12) 13) 14) 17) 21) 23) 26) 24) aigue (52) 25) mentale (55 - 63 - 91 - 179)	1) 9) 14) 18) 24) 30) 34) 47) 49) 56) 50) altération des capacités fonctionnelles 51) mauvaise santé physique 52) maladie aigue 53) vulnérabilité 54) perte de résistance 55) mauvaise santé mentale (dépression)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] frailty has been considered when there are indications of: (1) functional impairment and dependence on others for activities of daily living that threaten the ability of a person to live independently in the community, (2) poor physical health, such as chronic illness or acute illnesses, (3) disability, (4) vulnerability or lack of strength and resilience, (5) poor mental health functionning; for example , cognitive impairment or depression, (6) requiring formal , informal, or long-term care to meet basic needs, and (7) simply old age.
1) 4) 9)	1) 18)	35) 36)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Demographers use the term frailty in mathematical modelling of morbidity and mortality to denote a latent variable associated with extent of risk.

1) 2) 4) 5) 6) 7) 8) 9) 14)	1) 4) 6) 7) 10) 12) 13) 14) 23)	18) 22) 29) 56) maladie 57) perte	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Biomedical perspective, equating frailty with ageing, disease, decline, loss, and dependence on others.
1) 2) 4) 5) 6) 7) 8) 9) 11) 14)	2) 4) 6) 12) 13) 14) 21) 23) 25) 26) Dysfonction (10 - 47 - 55 - 58 -59 - 62 - 76 - 86 - 96 - 110 - 111) 27) sens (26 - 58 - 88) 28) social (59 - 108 - 153 - 160 - 164 - 180)	10) 22) 47) 55) 58) dysfonction sensorielle 59) dysfonctionnement social	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty as poor functioning in physical, cognitive, emotional, sensory, or social functionning.
1) 2) 3) 4) 6) 7) 9) 12) 14)	3) 8) 23) 25) 26) 29) évaluation/ mesure / identification (65 - 121 - 122 - 133 - 137 - 138 - 205)	3) 60) subdivisé 61) fragilité médicale 62) fragilité fonctionnelle 63) fragilité mentale 65) juste un type de caractéristique par individu pour l'évaluation	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	It has been subdivided into types including 'medical frailty', 'functional frailty', mental frailty, and 'physical frailty', implying that there is just one type of characteristic by wich an individual is evaluated for frailty.
4) 6)	7) 10)	29)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Aging.
1) 4) 6) 8) 9)	4) 10) 12) 13)	66) réserve physiologique réduite	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Reduced physiological reserves.
1) 2) 4) 5) 6) 8) 9) 11) 14)	6) 10) 12) 13) 27) 30) mobilité/ déplacement (67 - 74 - 75 - 165 - 170 - 173 - 187 - 188 - 189)	24) 26) 67) perte de mobilité	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Decreased muscle strengh, mobility and balance.
1) 4) 6) 8) 9)	4) 10) 12) 13)	23) 24) 25) 28) 68) perte d'endurance	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Decreased strength, flexibility, cardiovascular endurance and body composition.
1) 4) 6) 13) prévention/protection (31 - 37 - 43 - 45 - 52)	1) 10) 31) équilibre (homeostasie) (69 - 89 - 90 - 147 - 196)	69) mécanisme d'homéostasie compromis	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Compromised homeostatic mechanisms.
1) 4) 6) 8) 9)	4) 12) 13)	24) 53) 54) 70) délicatement constitué	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Feebleness, delicately constitued, vulnerable or lack of resilience.

1) 2)	1) 2)	1)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Disability.
1) 2) 4) 5) 6) 8) 14)	4) 6) 10) 12) 15) 16)	32) 71) perte de poids (involontaire)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Inactivity combined with weight loss.
1) 2) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 10) 12) 13) 26) 32) dépendance (78 - 79 - 85 - 86 - 107 - 201)	18) 50) 86)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Functional impairment and dependence in activities of daily living.
1) 2) 4) 6) 7) 9)	1) 2) 10) 14) 23)	30) 56) 72) maladie invalidante	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Chronic and disabling illness.
1) 2) 4) 5) 6) 7) 8) 9) 11) 14)	1) 2) 4) 6) 10) 13) 14) 15) 16) 21) 23) 24) 26) 30) 33) urinaire (76 - 191) 34) fécale (76) 35) cutané (77)	52) 56) 73) confusion 74) chute 75) immobilisation 76) incontinence 77) escarres	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Acute illnesses such as confusion, falls,immobility, incontinence, and pressure sores.
1) 4) 6) 7) 9)	4) 14) 23) 25)	55)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Poor mental health functioning, such as cognitive impairment and depression.
1) 2) 4) 5) 6) 8) 11) 14)	1) 4) 6) 16) 17) 32)	18) 78) assistance pour soins personnels 79) assistance pour les tâches ménagères	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Need for formal or informal assisstance with personal care or household tasks.
1) 4) 6) 8)	1) 7) 17)	49) 80) intervention d'un gériatre	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Specialized geriatric intervention and long-term (nursing home) care.
4)	4)	82) retard de croissance	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Failure to thrive.
4) 6) 8) 12)	4) 7) 10) 36) critères biologiques (83 - 114 - 120 - 137 -138 - 196)	83) biologiquement vieux	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Biologically old.

1) 3) 4) 6) 7) 9) 14)	1) 4) 7) 10) 11) 15) 23)	9) 21) 84) cachexie (syndrome de dépérissement)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Wasting syndrome common in people of advanced age.
1) 4) 8) 11)	1) 10) 32)	85) dépendance chronique	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Chronically dependent in a variety of ways.
1) 2) 4) 6) 8) 9)	1) 2) 4) 12) 13)	1) 50)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Functional disability.
1) 2) 4) 5) 8) 11) 14)	1) 2) 4) 6) 10) 26) 32)	18) 86) dépendance fonctionnelle	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Functional dependency.
1) 4) 6) 8) 9) 13)	1) 4) 10) 12) 13) 37) resistance (perte de) (87 - 90)	87) diminution de la capacité à répondre à une situation stressante (vulnérabilité aux facteurs de stress)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Decreased ability to respond to stressful situations.
1) 3) 4) 6) 7) 9) 13) 14)	3) 4) 13) 14) 23) 25) 27) 31)	55) 63) 70) 88) sensible 89) facilement perturbé	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Fragile, delicate, brittle, tender, easily disturbed.
1) 4) 6) 8) 9)	1) 4) 12) 13)	33) 53)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Functionaly vulnerable.
1) 2) 4) 7)	1) 2) 10) 14)	1) 30)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Chronic illness and disability.
1) 4) 6) 8) 9)	4) 12) 13)	24) 53)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Feebleness and general vulnerability.
1) 4) 6) 8) 11) 13)	10) 20) 31) 37)	90) précipitée par des facteurs (externes) de stress pourtant essentiels au maintien de fonctions.	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	External stressors that can precipitate frailty but are also essential for maintenance of function.
1) 2) 4) 5) 6) 7) 8) 9) 11) 13) 14)	1) 4) 6) 7) 10) 12) 13) 14) 16) 20) 23) 25) 37)	9) 32) 46) 54) 56) 57) 66) 87) 97) 91) inactivité (désuétude)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty results from a loss of a person's capability to withstand environmental stressors related to diminished physiologic reserves beyond a threshold limit. Reserve capacities reduced by disease, disuse, illness and age.

1) 2)	1) 2)	1)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is a precurssor to disability or unstable disability.
1) 4) 6) 7) 8) 9)	1) 10) 12) 13) 38) reaction en chaine (92 - 96) 39) irréversibles (95 - 117)	57) 92) une série de pertes (accumulation de deficits) 93) pertes épisodiques 94) pertes progressives 95) pertes irréversibles	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	The process of becoming frail consists of a series of episodic, progressive and irreversible losses.
1) 2) 4) 5) 6) 7) 8) 9) 14)	1) 4) 6) 7) 10) 12) 13) 14) 15) 16) 23) 25) 26) 38)	29) 32) 56) 57) 91) 96) (résulte d'une dysfonction tissulaire secondaire à) un flux d'énergie non optimale 97) perte seuil de fonction physiologique (déclin physiologique jusqu'à une limite)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty results from the dysfunction of tissue secondary to non-optimal energy flow because of disuse, aging and disease leading to a threshold loss of physiologic function.
1) 3) 9) 10)	8) 11) 13) 19) 40) réversible (99 - 100 - 150)	118) 98) opposée à la vitalité 99) réversible si rétablissement d'un flux énergétique optimale	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is defined as opposite to vitality along a continuum. Frailty is reversible through the reestablishment of optimal energy flow.
1) 4) 6) 8) 9)	4) 12) 13)	97)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	A person is considered frail if they have physiologic declines beyond a predefined threshold limit.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	6) 8) 10) 11) 12) 13) 15) 16) 30) 40)	22) 23) 24) 67) 100) un cycle 101) dédin énergétique 102) baisse du métabolisme 103) baisse de la dépense énergétique	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is defined as a cycle - a process of dedining energetics, including muscle mass loss, falling metabolic rate, declining strengh, energy expenditure and mobility.
1) 2) 4) 5) 6) 8) 9) 14)	4) 6) 7) 12) 13)	9) 18) 97)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	The frail elderly are those persons for whom the deficits outweigh the assets, so these people can no longer maintain their independence in the community.
1) 3) 4) 8) 11)	3) 5) 8) 11) 32) 41) interactions (105 - 208)	104) une dynamique (processus dynamique) 105) facteurs interagissants 106) différents degrés de fragilités 107) différents niveaux de dépendance	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Dynamic process with interacting factors resulting in different degrees of frailty characterized by different levels of dependence on others.

1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 8) 10) 11) 12) 13) 20) 26) 28)	17) 59) 66) 118)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty occurs when there is diminished ability to carry out the important practical and social activities of daily living. Reserve capacity contributes to a person's position on the frail hardiness continuum, but, by itself is sufficient to determine frailty.
3) 4) 9) 10) 11)	8) 10) 11) 13) 19) 20) 41)	42) 46) 98) 105) 118)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is defined as opposite to hardiness along a continuum. The position on the continuum depends on the complex interaction among personal and environmental factors.
1) 2) 4) 5) 6) 8) 11) 14)	4) 6) 7) 10) 32)	18) 29) 107)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty reflects a societal view of aging as a battle between independence and dependence.
1) 2) 4) 6) 8) 9) 11)	4) 7) 10) 13) 17) 20) 26) 28)	9) 59) 108) produite socialement par la relation aidant/soignant/ personne âgée	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is socially produced through the interaction of older adults, their caregivers and their health providers.
1) 3) 4) 6) 8) 11)	4) 7) 8) 10) 11) 17) 20) 28)	9) 104) 108)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty is a quality and a dynamic adaptational process on the part of elderly persons, families, and health care personnel.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 8) 10) 11) 12) 13) 26) 32)	17) 18) 57) 86)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty is unidimensional and is characterized by functional losses that influence the capacity for independence in daily living.
1) 2) 4) 5) 6) 9) 11) 14)	4) 6) 7) 13) 20) 26) 28)	9) 17) 59)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frail elders as those who are unable to fulfill social roles and perform activities of daily living.
2) 4) 5) 14)	4) 6)	18)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Dependence on others is a sufficient condition for frailty.
1) 2) 3) 4) 5) 6) 8) 9) 13) 14)	2) 4) 6) 8) 10) 11) 12) 13) 15) 21) 26) 42) musculo - squeletique (111 - 146 - 170 - 173 - 182 - 193) 43) reserves (112 - 137 - 138 - 139)	22) 31) 41) 47) 111) fonction musculo-squelettique 112) capacité aérobie	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty as consisting of the physiological dimensions of muskuloskeletal function, aerobic capacity, cognitive and nutritional states.
1) 4) 6) 7) 9)	1) 10) 13) 14) 23) 44) physiologique (113 - 167 - 168 - 170)	56) 113) état physiologique	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty is more a reflection of a disease or physiological state than a statement of need.
1) 2) 3) 4) 6) 8) 9) 11) 12) 14)	3) 13) 20) 25) 26) 28) 36)	59) 63) 114) dimension biomédicale	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	While the majority of models have viewed frailty as including primarly biomedical and objective dimensions, others have gone beyond this by incorporating psychological and/or social dimensions.

			3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] A person can be frail in one aspect of life but not another.
1) 3) 4) 6) 7) 9) 13)	3) 23) 45) traitements (115 - 184)	61) 115) a traiter médicalement	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	The problem of frailty is viewed as a medical problem that falls to the medical community to identify and treat refers to this as the medicalization paradigm.
1) 3) 4) 6) 8) 11) 13)	8) 10) 20) 31) 37) 41)	46) 90) 105)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	The presence of frailty may result from the presence or absence of numerous intersecting factors, many of wich are external to the individual, and are conditions occuring within the environment.
4) 11)	10) 20)	46)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty can be addressed by altering the characteristics of the external environment rather than focusing entirely on the individual.
1) 2) 4) 6) 8) 9) 11)	1) 2) 4) 7) 10) 12) 13) 26) 32)	29) 66) 86)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	It is a state of reduced physiological reserves associated with ageing that affects an individual's capacity for functional independence.
1) 4) 6) 8) 9)	4) 7) 12) 13)	9) 22)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] A model of breakdown among older people.
1) 2) 4) 5) 6) 7) 8) 9) 14)	1) 6) 7) 10) 12) 14) 16) 23) 25)	29) 32) 56) 57) 91)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty results from age-related physiological losses in combination with disease, disuse and illness;
4) 3) 6) 9)	7) 10) 11) 13)	21) 29) 116) commun (répandu)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty as a syndrome that is age-related and common.
4) 6)	7) 10)	29)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	Frailty has age-specific connotations.
1) 4) 6) 8) 9)	1) 10) 12) 13) 39)	22) 57) 117) absence d'espoir, pas de perspectives positives	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	The littérature has associated frailty with a lack of hope, absence of positive outlook [...], and loss or declining abilities.
3)	3) 5) 8) 11)	106) 118) continuum	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Frailty is a relative term suggests not thinking of people as either frail or not frail, but rather placing them on a continuum.
3) 4) 9)	3) 4) 5) 13)	53) 106)	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Different degrees of frailty suggests a vulnerable state in wich an individual is at risk of becoming more or less frail over time.

1) 2) 3) 4) 6) 7) 9) 10) 11) 14)	3) 4) 5) 8) 10) 11) 13) 15) 19) 20) 26) 28) 38) 46) source (119)	41) 42) 43) 44) 45) 46) 59) 96) 106) 119) originaire de l'individu	3) Conceptualizations of frailty in relation to older adults (Journal of Advanced Nursing, 2003)	[...] Definitons: (a) the degree of frailty is context dependent and, therefore, greatly affected by the subjective perceptions of individuals, (b) frailty is multidimensional and results from a complex interplay of physical, psychological, social and environmental factors, (c) frailty is not age-related and, therefor, does not portray a negative and stereotypical view of ageing, and (d) frailty can originate from within an individual or from conditions in the environment. What is needed is a 'fit' between the needs and resources of the person and the demands and resources of the environment.
1) 3) 4) 6) 8) 9)	4) 7) 8) 10) 11) 12) 13)	9) 29) 66) 118)	4) Selected as the best paper in the 1990s: Reducing frailty and falls in olders persons: an investigation of tai chi and computerized balance training (The American Geriatrics Society, 2003)	Frailty, defined as a reduction in physiological reserves and behavioral capacities, can affect individuals throughout the age continuum, but the consequences of frailty are particularly devastating for older persons.
1) 2) 3) 4) 6) 8) 9) 12) 14)	3) 13) 25) 26) 36)	62) 63) 114)	4) Selected as the best paper in the 1990s: Reducing frailty and falls in olders persons: an investigation of tai chi and computerized balance training (The American Geriatrics Society, 2003)	[...] Biomedical, functional, and psychological indicators of frailty.
3) 6) 8) 12)	8) 29) 36)	120) base biologique 121) cliniquement identifiable	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	The construct of frailty appears to have a firm biological basis, and a frailty is easily recognized clinically.
1) 2) 3) 4) 6) 7) 8) 9) 12)	1) 4) 5) 10) 11) 12) 13) 14) 18) 22) 23) 26) 29) 38)	48) 50) 56) 92) 110) 122) index de fragilité 123) comorbidité (résulte de la comorbidité)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	Frailty has been mesured by constructing a frailty index (FI), based on the accumulation of a variety of functionnal deficits (such as comorbid illness, poor health attitudes, signs of disease, and self-reported disabilities).
9) 10)	19)	124) différent de l'infirmité	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	[...] Frailty is not the same as disability, as evidence by the fact that not all disabled people are frail.
1) 2) 3) 4) 6) 8) 9) 11) 13)	1) 2) 4) 8) 10) 12) 13) 20) 26) 28) 37) 41)	12) 22) 42) 53) 59) 87) 105)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	[...] A vulnerable state of health, arising from the complex interaction of medical and social problems, resulting in a decreased ability to respond to stress, and associated with a decline in functional performance.
1) 2)	1) 2)	1)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	In general, frail people are more likely to be disabled.

1) 2) 3) 4) 8) 11)	1) 2) 3) 5) 10) 26) 32)	86) 106) 107)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	Another way to conceptualize degrees of frailty in frail samples is to consider the relative degree of functional dependence.
1) 3) 4) 8) 9)	1) 3) 5) 17) 18)	8) 34) 36) 106) 126)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	Higher levels of frailty are associated with increasing risk of an adverse outcome of death or institutionalization.
1) 2) 3) 4) 6) 7) 9) 10) 12)	1) 2) 5) 10) 11) 14) 19) 23) 29)	1) 12) 56) 122) 124)	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	[...] The relationship between frailty and functional decline [...] follows the hierarchical pattern suggested by population studies but that frailty is more than just disability, as evidence here by the combination of impairment, disability, and disease that constitute the index.
			5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	Frailty appears to operate analogously to macroscopic state variables (such as temperature measured by the summary of the average kinetic energy of the component molecules) in physical systems.
1) 3) 4) 6) 9) 10)	1) 3) 4) 5) 7) 19)	7) 8) 9) 106) 126) grand risque d'issues (conséquences) défavorables 127) n'affecte pas la réalisation de buts individuels	5) Operationalizing a frailty index from a standardized comprehensive geriatric assessment (The American Geriatrics Society, 2004)	Although moderately and severly frail older adults are at a greater risk of adverse outcomes, frailty did not affect their ability to achieve individualized goals.
1) 3) 4) 6) 8) 9) 13)	1) 4) 10) 11) 12) 13) 31) 37)	21) 22) 66) 69) 87)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Frailty is a syndrome associated with reduced functional reserve, impairment in multiple physiological systems, and reduced ability to regain physiological homeostasis after a stressful, destabilizing event.
1) 2) 4) 5) 6) 8) 9) 14)	1) 2) 4) 6) 7) 12) 13) 18) 21) 26)	1) 9) 10) 12) 22) 33) 36) 47)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Frail older persons are at high risk of accelerated physical and cognitive functional decline, disability, and death.
1) 3) 9)	8) 11) 40)	100)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Fried and colleagues defined frailty as a vicious cycle connecting specific signs and symptoms.

1) 2) 3) 4) 5) 6) 8) 9) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 29) 47) usure/ épuisement (129 - 169)	14) 21) 24) 32) 71) 121) 128) mauvaise performance physique 129) asthénie, épuisement	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	[...] A dinical syndrome characterized by three or more of the following criteria: low muscle strengh, unintentional weight loss, feeling of exhaustion, poor physical performance, and reduced physical activity.
3) 4) 14)	10) 11) 15)	21) 130) prise alimentaire insuffisante	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	[...] Inadequate dietary intake is a component of the syndrome, wich may trigger and/or sustain the cascade of the other processes that lead to frailty.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 12) 13) 15) 16) 22) 23) 30) 47)	4) 14) 24) 32) 48) 129) 162)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Frailty was defined as having two or more of the following four criteria: 1) exhaustion [self-reported feeling that "everything I did was an effort," at least three times a week in the last month.]; 2) low physical activity (sedentary state or performing light intensity physical activity [i.e., walking less than 1 hour/ week]); 3) poor muscle strengh (grip strengh in the lowest quintile, stratified by gender and body mass index [BMI] quartiles); and 4) low walking speed (time to walk 15 feet in the highest quintile, stratified by gender and standing height).
4) 14)	10) 15)	131) faible apport de vitamine E et C (+acide folique)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	[...] Low intakes of vitamins E and C were associated with frailty, independent of protein and energy intake.
4) 14)	10) 15)	132) faible apport de vitamine D	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	[...] Association between low intake of vitamin D and frailty.
3) 4) 14)	10) 11) 15)	21) 31) 130)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Poor nutritional intake is an important factor associated with the frailty syndrome.
4) 14)	10) 15)	31) 130)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	A low intake of nutrients is associated with frailty even independent of energy intake.
3) 4) 14)	10) 11) 15)	21) 130)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	A low intake of specific nutrients may contribute to the development of the frailty syndrome.

1) 2) 4) 6) 7) 14)	4) 7) 10) 15) 26) 38)	9) 31) 96) 130)	6) Low nutrient intake is an essential component of frailty in older persons (Journal of Gerontology: Medical Sciences, 2006)	Low intakes of energy and specific nutrients are associated with frailty. By using nutritional intake, it may be possible to target older early stage of frailty.
1) 2) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 7) 10) 13) 17) 18) 30)	1) 9) 18) 36) 49) 53) 74) 116) 126)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frailty is common in older adults and is considered a state of high vulnerability for adverse health outcomes, including disability, dependency, falls, need for long-term care, and mortality.
1) 2) 3) 4) 6) 7) 9) 10) 12)	1) 2) 7) 8) 10) 13) 18) 19) 23) 29) 44)	1) 29) 113) 121) 123) 124)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frailty has sometimes been used synonymously with disability and comorbidity, however, mounting consensus indicates that frailty is a physiologically based condition with a clinical presentation that predicts disability and may result from comorbidity as well as multisystem physiologic dysregulation with aging.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 22) 23) 29) 30) 47)	4) 14) 21) 24) 32) 48) 71) 121) 129)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frailty was defined as a clinical syndrome based on having at least three of five criteria: unintentional weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 22) 23) 29) 30) 47)	4) 14) 24) 32) 48) 71) 129) 133) phénotype de la fragilité	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Women were categorized as frail or not frail according to a recent frailty phenotype (5) that was based on the presence of five characteristics: (i) unintentional weight loss (self-reported weigth loss of 10 pounds or more in the prior year), (ii) self-reported exhaustion, (iii) weakness (measured grip strength in the lowest quintile at baseline), (iv) slow walking speed (the slowest quintile on test of timed walking speed), and (v) low level of physical activity (lowest quintile of physical activity scale). Women were defined as frail by the presence of at least three, and not frail if they had up to two of the five components.
1) 4) 6) 7) 8) 9) 14)	1) 4) 7) 10) 14) 15) 21) 23) 48) cardio-vasculaire (135 - 190 - 192 - 197 - 202)	9) 31) 56) 134) moins instruits (plus bas niveau d'éducation) 135) plus haute prévalence de pathologie cardiovasculaire	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frail women were older($p<.0001$), less educated ($p=.002$), had a higher prevalence of cardiovascular disease ($p<.0001$), and a higher proportion of frail women than nonfrail women had a BMI, 18.5 kg/m^2 ($p<.0001$).
1) 4) 6) 8) 14)	12) 15)	136) perte d'appétit	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	A larger proportion of frail women reported fair or poor appetite compared with women who were not frail.
1) 4) 6) 8) 12) 13) 14)	4) 10) 12) 15) 29) 36) 43)	132) 137) déficit en vitamine A (caroténoides) 138) déficit en sélénium et zinc	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frail women had lower serum concentrations of total carotenoids ($p=.06$), 25-hydroxyvitamin D ($p<.0001$), selenium ($p<.0001$), and zinc ($p=.001$) at baseline compared with women who were not frail.

1) 4) 6) 8) 12) 13) 14)	4) 12) 15) 29) 36) 43)	137)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	The incidence rates for frailty were higher for women in the lowest quartile of total carotenoids (p=.04).
4) 6)	4) 7) 10)	9) 29)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Age (p<.0001) was associated with risk of becoming frail.
			7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Current smoking , race, education, diabetes melitus, cardiovascular disease, osteoarthritis, chronic pulmonary disease, and multivitamin use were not significantly related to incident frailty.
1) 4) 6) 8) 13) 14)	4) 10) 12) 15) 43)	31) 139) lié au nombre de carences en nutriments	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Women with no nutrient deficiencies had the lowest incidence rate of frailty, and the incidence of frailty increased with higher number of deficiencies.
1) 2) 4) 6) 7) 8) 9) 13) 14)	1) 4) 7) 9) 10) 12) 14) 15) 23) 43) 49) addiction (140 - 166 - 203)	29) 30) 31) 56) 139) 140) tabagisme 141) pathologie pulmonaire (chronique)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	The number of nutrient deficiencies was associated with the incidence of frailty [...] after adjusting for age, smoking, and chronic pulmonary disease.
1) 4) 6) 8) 12) 13) 14)	4) 10) 12) 15) 29) 36) 43)	131) 137)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	total carotenoids were associated with the incidence of frailty [...], and a-tocopherol had a marginal association with the incidence of frailty.
1) 4) 6) 8) 13) 14)	4) 7) 10) 12) 15) 43)	9) 31) 139)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Older women who had one or more indicators of poor micronutrient status had significantly higher risk of becoming frail.
1) 4) 6) 8) 13) 14)	4) 10) 12) 15) 43)	31) 139)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Micronutrient deficiencies may be one major pathway by wich women are at the higher risk of becoming frail.

1) 4) 8) 9)	1) 17) 18)	34) 36) 126) 142) augmente le risque d'hospitalisation	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Frailty increases the risk for adverse outcomes, including hospitalizations and mortality.
4) 6) 8) 12) 14)	10) 15) 36)	31) 120)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Micronutrient malnutrition may play a role in the pathogenesis of frailty through different biological pathways.
1) 4) 6) 8) 12) 13) 14)	4) 12) 15) 29) 36) 43)	137)	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Low serum carotenoid concentrations were predictive of frailty.
4) 14)	10) 15) 42)	143) faible apport en fruits et légumes 144) favorisé par l'augmentation du stress oxydatif 145) favorisé par l'inflammation 146) favorisé par la sarcopénie	7) Low serum micronutrient concentrations predict frailty among older women living in the community (Journal of Gerontology: Medical Sciences, 2006)	Low intake of fruits and vegetables may increase the risk of frailty through increased oxidative stress, inflammation, and sarcopenia.
			8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	Frailty is commonly used in the contexte of elderly facing functional disabilities but the term is not a synonym for disability.
1) 4) 6) 8) 13)	1) 10) 12) 31)	33) 57) 147) instabilité	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	Frailty is related to instability and risk of loss of function.
1) 2) 4) 5) 6) 8) 9) 14)	1) 6) 10) 12) 13) 26) 42)	22) 28) 102) 111) 148) détérioration du système immunitaire	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	A body-wide set of linked deteriorations including, but not confined to musculoskeletal, cardiovascular, metabolic, and immunologic systems.

1) 2) 3) 4) 6) 7) 9) 14)	3) 8) 23) 25) 26)	3) 60) 61) 62) 63)	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	Frailty can be subdivided into various types, including medical, functional, mental, and physical frailty.
1) 2) 3) 4) 5) 6) 8) 9) 11) 12) 14)	1) 2) 4) 5) 6) 8) 10) 11) 12) 13) 15) 16) 17) 18) 29) 30) 47)	1) 4) 14) 17) 24) 32) 36) 71) 74) 129) 133) 142) 149) pré-fragilité	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	The phenotype concept introduced by Fried et al is operationalized by 5 indicators: unintentional weight loss, weakness, exhaustion, slowness, and low physical activity. [...] Frailty is concidered to be present if at least 3 indicators are positive and a pre-frailty status is defined with 1 or 2 positive indicators. This classification system has been shown to be predictive for falls, worsening activity of daily living (ADL), disability, hospitalizations and death.
1) 2) 4) 6) 8) 9)	16) 40)	150) possible prévention, recul ou réversibilité par la réalisation d'exercices	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	Exercise interventions may be effective in preventing, delaying, or reversing the frailty process.
1) 2) 3) 4) 6) 8) 11)	1) 3) 5) 10) 30)	74) 106)	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	The degree of frailty plays a role in the effectiveness of exercise programs that aim at fall prevention.
3) 12)	5) 8) 11) 29)	14) 21) 121) 149)	8) Effects of exercise programs on falls and mobility in frail and pre-frail older adults: A multicenter randomized controlled trial (Archives of Physical Medecine and Rehabilitation, 2006)	Frailty was defined as a clinical syndrome based on the presence of 3 or more indicators. When 1 or 2 indicators were present the subject was defined to be pre-frail and those with no indicator present were classified to be non frail.
1) 2) 3) 4) 6) 7) 8) 9) 11) 12) 14)	4) 8) 10) 11) 13) 14) 20) 23) 25) 26) 28) 36)	41) 42) 55) 59) 120) 151) facteurs spirituels	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty is a multifaceted gerontological concept that lacks a clear definition, but may result from an identifiable homogeneous cluster of bio-psycho-social-spiritual factors.
1) 2) 4) 6) 8) 9) 11)	1) 10) 17) 18) 20) 28) 30)	34) 35) 36) 74) 152) peut engendrer une tension sur les systèmes de santé 153) peut engendrer une tension sur les structures familiales	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty, wich increases morbidity, mortality, falls and the need for institutional care [...], may cause an increased strain on all healthcare systems and family structures.

4) 6)	4) 7)	9)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty is most prevalent among the old, especially those who are 80 years of age or more.
1) 2) 4) 5) 6) 9) 11) 14)	1) 4) 6) 13) 20) 28)	18) 44) 153) 185)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	By adversly affecting quality of life for the individual as well as family and friends, frailty diminishes independence in most activities of daily living.
1) 2) 4) 5) 6) 7) 8) 9) 14)	1) 6) 7) 10) 14) 16) 23)	29) 32) 56)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Regardless of how frailty was defined, common contributing factors were identified. The three most commonly identified contributing factors were physical inactivity, ageing and disease.
1) 4) 6) 7) 9)	1) 4) 7) 10) 14) 23)	9) 56)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Age and disease as the factors that contribute to frailty.
1) 4) 6) 8) 14)	10) 12) 15)	31) 136)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Nutritional frailty is an acute, dramatic reduction in appetite as well as food consumption.
1) 2) 4) 6) 7) 11) 14)	4) 10) 15) 20) 26) 38)	46) 96)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Diminished energy flow (ineraction) between the individual and their environment.
1) 4) 6) 7) 8) 9)	1) 10) 12) 13) 38)	24) 57) 92)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A state of muscular weakness and other secondary widely distributed losses in function and structure.
1) 2) 4) 5) 6) 9) 11) 14)	4) 6) 13) 20) 26) 28)	17) 59)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A diminished ability to carry out the important practical and social activities of daily living.
1) 2) 4) 6) 8) 9)	1) 2) 4) 10) 12) 13)	1) 66)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A state of reduced physiological reserve associated with increased susceptibility to disability.
1) 4) 6) 8) 9) 13)	1) 4) 7) 10) 12) 13) 31) 37)	9) 53) 69) 87)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A state of age-related physiological vulnerability resulting from impaired homeostatic reserve and a reduced capacity of the organism to withstand stress.
1) 4) 6) 8)	10) 12)	102)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Neuroendocrine dysregulation.

1) 4) 6) 8)	1) 10) 12)	148)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Immune dysfunction.
			9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Is a mid-point between independence and pre-death.
			9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Loss of adaptive capacity due to a loss of complexity.
1) 4) 6) 9)	1) 4) 7) 18)	9) 35) 36)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A commonly used term indicating older persons at risk for morbidity and mortality.
1) 4) 6) 13)	1) 10) 31)	69)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Those in whom the assets maintaining health and the deficit threatening it are in precarious balance.
1) 2) 4) 5) 6) 8) 14)	6) 10) 12) 15) 26) 42) 50) neurologique (157 - 178 - 179 - 192 - 199)	101) 102) 111) 157) déficit neurologique	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Deficits in the neurological, musculo-skeletal and energy metabolism systems.
4) 14)	10) 15)	31)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Chronic under nutrition.
1) 2) 4) 5) 6) 8) 9) 11) 14)	4) 6) 9) 10) 12) 13) 16) 30) 42)	4) 16) 24) 32) 102) 103) 146)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Sarcopenia/↓Resting metabolic rate, ↓Walking speed, ↓Activity, ↓Total energy expenditure, ↓Strength and power ↓VO2max.
1) 4) 6) 8)	1) 12)	33)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Difficulty with functional tasks.
1) 2) 4) 5) 6) 7) 8) 14)	4) 6) 10) 12) 15) 16) 26) 38)	32) 71) 96) 130) 162) 158) IMC bas (inféńeur à 23,5 kg/m²)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Physical inactivity combined with either low energy intake, 5-year weight loss, or low BMI (physical inactivity<210 min/week, low energy intake<7,6 MJ per day, 5 year weight loss > 4kg, Low BMI< 23,5 kg/m²).
1) 4) 6) 7) 8) 9) 12)	1) 4) 12) 13) 22) 23)	33) 48)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty is diminished functioning combined with diminished self-rated health.

1) 3) 4) 6) 7) 8) 9) 13) 14)	1) 4) 7) 10) 11) 12) 13) 15) 18) 23) 37) 47)	9) 21) 24) 35) 36) 53) 71) 84) 87) 129)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A wasting syndrome of older adults, characterized by weakness, fatigue, weight loss and extreme vulnerability to stressors, that predicts inceased morbidity and mortality.
1) 4) 6) 8) 9) 11) 13)	1) 4) 7) 10) 12) 13) 20) 37)	9) 46) 53) 87)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A combination of deficits or conditions that arise with increasing age and contribute to making the elderly person more vulnerable to changes in the surroundings and to stress.
1) 2) 3) 4) 5) 6) 8) 9) 14)	2) 4) 6) 10) 11) 12) 13) 15) 21) 26) 27)	10) 21) 22) 31) 47) 58)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	A syndrome involving deficiencies in two or more domains involving physical, nutritive, cognitive and sensory capabilities.
1) 2) 4) 5) 14)	1) 2) 4) 6)	1) 19)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Disability with one or more IADLs measured by the Instrumental Activities of Daily Living scale.
1) 2) 4) 5) 6) 8) 9) 14)	6) 10) 12) 13) 16) 26) 42)	24) 32) 111)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Theory and research dearly identifies inactivity leading to musculo-skeletal weakness as a major contributor to frailty.
1) 4) 6) 7) 9)	1) 10) 14) 23)	56)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Disease is a strong contributor to frailty.
4) 6)	7) 10)	29)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Ageing was a predictor of frailty.
1) 2) 4) 6) 8) 9) 14)	2) 4) 12) 13) 21) 26)	47)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Cognition as a factor contributing to frailty.
4) 14)	10) 15)	31)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Contribution of malnutrition to frailty.
1) 2) 3) 4) 5) 6) 7) 8) 9) 12) 14)	4) 6) 8) 11) 12) 13) 22) 23) 26)	10) 21) 41) 48) 50) 159) syndrome strictement physique	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty was defined as a strictly physical syndrome, as functional impairment and poor self-rated health and as a syndrome involving dysfunction in a broad spectrum of domains.
4)	10)	151)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Spirituality as a factor contributing to frailty.
1) 4) 6) 8) 9)	4) 10) 12) 13)	66)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	The idea of reserve capacity is present in almost all theoretical or conceptual definitions of frailty.

1) 2) 4) 5) 6) 8) 9) 13) 14)	4) 6) 9) 10) 12) 13) 15) 26) 42) 43) 50)	31) 66) 111) 112) 157)	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Reserve capacity is needed in the musculoskeletal, neurological, nutritional and aerobic systems if frailty is to be avoided.
1) 2) 3) 4) 6) 7) 8) 9) 11) 12) 14)	1) 2) 3) 4) 7) 8) 10) 11) 12) 13) 14) 15) 20) 21) 23) 25) 26) 28) 36)	12) 29) 31) 41) 42) 47) 56) 59) 63) 120) 151) 160) facteurs socio-économiques	9)Factors contributing to frailty: littérature review (The Authors Journal Compilation, 2007)	Frailty is multi-dimensional and has a common cluster of contributing factors. The cluster, wich includes physical, cognitive/psychological, socio-economic, nutritional and social factors, as well as disease and ageing, are a reflection of the bio-psycho-social-spiritual view of health.
3) 4) 9) 12)	4) 8) 11) 13) 29)	14) 133)	10) A comparison of two approaches to measuring frailty in elderly people (Journalof Gerontology: Medical Sciences, 2007)	A specific phenotype, consisting of five items, any three of wich mark a person as recognizably frail.
1) 3) 4) 6) 7) 8) 9) 12)	5) 10) 11) 12) 13) 29) 38)	92) 122)	10) A comparison of two approaches to measuring frailty in elderly people (Journalof Gerontology: Medical Sciences, 2007)	A frailty index (FI) based on a count of accumulated deficits.
1) 2) 3) 4) 5) 6) 7) 8) 9) 12) 14)	1) 4) 5) 6) 8) 10) 11) 12) 14) 23) 29) 50)	17) 56) 121) 122) 157)	10) A comparison of two approaches to measuring frailty in elderly people (Journalof Gerontology: Medical Sciences, 2007)	The FI was developed using 70 deficits from clinical examination (5,16). [...] Items included the presence and/or severity of current diseases, ability in activities of daily living (ADL), and physical signs from the clinical and neurological examinations.
1)	1)	126)	10) A comparison of two approaches to measuring frailty in elderly people (Journalof Gerontology: Medical Sciences, 2007)	Adverse outcomes occured more commonly among people who were frail.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 5) 6) 8) 10) 11) 12) 13) 16) 22) 23) 30) 42) 47)	4) 14) 24) 32) 48) 129) 146) 149)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frailty was defined as three or more of the following: sarcopenia (low appendicular skeletal mass adjusted for height and body fat), weakness (grip strength), self-reported exhaustion, low activity level, and low walking speed. Prefrail men met one or two criteria; robust men had none.
1) 4) 6) 8) 9) 13)	1) 4) 10) 12) 13) 31) 37)	53) 69) 87)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frailty has been described as "an excess vulnerability to stressors, with reduced ability to maintain or regain homeostasis after a destabilizing event."
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 10) 11) 12) 13) 15) 16) 30) 42)	4) 21) 23) 24) 32) 68) 71) 146)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	A conceptual framework for the syndrome of frailty as an accumulation of weight loss, sarcopenia (age-associated muscle loss), reduced muscular strength and power, slower walking speed, less physical activity, and poor endurance has been proposed.

2) 3) 4) 5) 9) 10) 14)	6) 11) 13) 19)	21) 124) 159) 161) différent de la comorbidité	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	A physical syndrome that is distinct from comorbidity and disability.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 5) 6) 8) 10) 11) 12) 13) 15) 16) 30) 42)	4) 14) 24) 32) 68) 101) 146) 149) 159)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	The CHS frailty definition comprises five domains of physical health: shrinking or sarcopenia, weakness, slowness, low energy or endurance and low activity level. Individuals who had three or more of these components were considered frail, participants with one or two components were considered prefrail, and those with no components were considered robust.
1) 4) 6) 7) 9) 12)	1) 4) 13) 18) 22) 23)	36) 48)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Association between the CHS frailty definition of frailty and health status and mortality.
1) 4) 6) 9)	1) 4) 7) 18)	9) 36)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Association between frailty and mortality in older men.
1) 4) 9) 14)	1) 10) 15) 18)	36) 158) 162) influencé par l'IMC (sous poids, normal, surpoids, obèse)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Association between the CHS frailty definition and mortality is consistent across body mass index (BMI) categories of underweight, normal weight, overweight, and obese.
4) 14)	10) 15)	162) 163) Obésité	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Obese women had the highest prevalence of frailty, and mean BMI was higher in frail women and lower in robust women.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 5) 6) 8) 10) 11) 12) 13) 15) 16) 30) 42)	4) 14) 24) 32) 101) 146) 149)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	A man was considered frail if three or more of the following five criteria were present: shrinking/sarcopenia, low activity, weakness, slowness, or low energy. [...] Men who had one or two of the criteria were considered prefrail, whereas those with no criteria were considered robust.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	1) 2) 4) 5) 6) 7) 10) 11) 12) 13) 21) 22) 23) 26) 30)	5) 6) 9) 47) 48) 74) 149)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were more likely to be older [...]; be unable to complete the chair stands or narrow walk, have poorer cognitive function [...] have poorer self-rated health, and be more likely to report a history of falls than men who were prefrail or robust.

1) 4) 6) 8) 11) 14)	4) 10) 21) 28)	134) 164) célibataire	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were also more likely to be unmarried and to be less educated.
1) 2) 4) 6) 7) 8) 9) 11) 12) 14)	4) 10) 13) 14) 16) 22) 23) 25) 30)	48) 55) 165) moins de marche (entrainement à la marche)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were less likely to report walking for exercise and more likely to report a depressed mood and to have poorer selfrated health.
4) 7)	4) 10) 49)	140) 166) en cour d'abstention de consommation d'alcool	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Additionally, frail men were more likely to be current smokers and more likely to currently abstain from alcohol.
1) 2) 4) 5) 6) 8) 9) 11) 14)	4) 6) 10) 12) 13) 30)	17) 19) 67)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were much more likely to report mobility limitations[...] and IADL limitations.
1) 2) 4) 5) 6) 8) 14)	6) 10) 12) 15) 44) 47)	167) petite taille 168) plus maigre 169) plus importante perte de hauteur depuis l'âge de 25ans	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were shorter, weighed less, had lost more height since age 25, and had lower BMD (total hip and femoral neck).
1) 2) 4) 5) 6) 8) 9) 11) 14)	2) 4) 6) 10) 12) 13) 21) 26) 30) 42) 44)	47) 170) jambes moins puissantes	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Age-adjusted means were lower for frail men for leg power, and frail men had worst cognitive function.
4) 14)	10) 15)	132)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men had lower dietary calcium and vitamin D intake.
4) 6)	4) 7) 10)	9) 29)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	The prevalence of frailty increased with age.

4) 6) 9)	10) 51) inné (171 - 176 - 186)	171) origine ethnique	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frailty status also differed modestly according to racial background.
4) 14)	10) 15)	162)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	The prevalence of frailty differed according to BMI level.
1) 4) 9)	1) 18)	36)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Multivariate models show that frail men had approximately twice the risk of mortality as robust men.
1) 4) 6) 9) 14)	1) 7) 10) 15) 18)	29) 36) 162)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	The relationship between frailty and mortality differed according to age [...] and BMI category.
1) 2) 4) 5) 6) 7) 8) 9) 11) 12) 14)	2) 4) 6) 7) 10) 12) 13) 21) 22) 23) 26) 30)	9) 17) 19) 29) 47) 48) 67) 128)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Frail men were older and had poorer cognitive function, worse performance on physical function tests, poorer self-rated health, and more mobility and IADL limitations than other men.
1) 4) 6) 9)	1) 7) 18)	36) 172) plus grand risque de mortalité avant 80ans	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	The association between frailty and mortality was stronger in younger (o80) than older men.
2) 4) 5) 6) 9) 14)	6) 10) 15) 44) 51)	168) 171)	11) Frailty in older men: prevalence, progression, and a relationship with mortality (The American Geriatrics Society, 2007)	Prevalence of frailty is somewhat higher in normal and underweight men and somewhat higher in African-American and Asian men.
1) 4) 6) 8) 9) 10)	1) 4) 7) 10) 12) 13) 18) 19)	4) 24) 132)	12) Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women (Archives of Internal Medicine, 2008)	components of frailty such as weakness and slowness are potential sequelae of vitamin D deficiency.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 5) 6) 8) 10) 11) 12) 13) 15) 16) 22) 23) 29) 30)	4) 14) 24) 32) 48) 71) 101) 122)	12) Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women (Archives of Internal Medicine, 2008)	Fried et al, using data from the Cardiovascular Health Study (CHS), proposed a phenotype of frailty (CHS index) in wich 3 or more of the following 5 components were present: unintentional weight loss, self-reported reduced energy level, reduced grip strength, slow walking speed, and low level of physical activity.

1) 2) 3) 4) 6) 8) 9) 11) 12)	1) 2) 5) 10) 11) 17) 18) 29) 30)	1) 34) 36) 74) 122) 142)	12) Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women (Archives of Internal Medicine, 2008)	Frailty as defined by the CHS index was associated with an increased risk of falls, hospitalization, disability, and death.
1) 2) 3) 4) 5) 6) 8) 12) 14)	4) 5) 6) 10) 11) 12) 15) 29)	6) 71) 101) 122)	12) Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women (Archives of Internal Medicine, 2008)	A simple frailty index using 3 components: weight loss, the subject's inability to rise from a chair 5 times without using her arms, and reduced energy level (Study of Osteoporotic fractures [SOF] index).
1) 4) 6) 8) 9)	4) 12) 13)	22) 53)	12) Comparison of 2 frailty indexes for prediction of falls, disability, fractures, and death in older women (Archives of Internal Medicine, 2008)	The use of the term frailty in clinical geriatric medicine typically describes the presence of multisystem impairment and increasing vulnerability.
1) 4) 6) 8) 9)	4) 7) 10) 12) 13)	9) 24) 53) 66)	13) Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study (Journal of Gerontology: Medical Sciences, 2008)	In geriatric medicine, the term "frailty" has been used to describe older adults who are physically vulnerable, weak, and lack physiological reserve.
1) 2) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 10) 12) 13) 30)	1) 4) 24) 145)	13) Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study (Journal of Gerontology: Medical Sciences, 2008)	A growing body of evidence suggests a reationship between inflammation and risk of disability, frailty, walking speed, and strength.
1) 4) 6) 7) 9) 14)	1) 4) 10) 14) 23) 25) 48) 50)	55) 56) 190) 199)	13) Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study (Journal of Gerontology: Medical Sciences, 2008)	[...] A diagnosis or disease that manifests as frailty (Parkinson disease, congestive heart failure, stroke, coronary heart disease [CHD], use of antidepressant medications).
1) 2) 3) 4) 6) 8) 9) 11) 12) 14)	1) 2) 4) 7) 8) 10) 11) 13) 17) 18) 29) 30) 42)	1) 9) 36) 133) 142) 173) fractures osseuses (de hanche chez la femme âgée.)	13) Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study (Journal of Gerontology: Medical Sciences, 2008)	Definition of the frailty phenotype in WHI was guided by the criteria used in the Cardiovascular Health Study and was strongly associated with future mortality, disability, hospitalization, and hip fracture among older women.
1) 4) 9) 14)	1) 10) 15) 18)	35) 123) 163)	13) Statin use and incident frailty in women aged 65 years or older: prospective findings from the Women's Health Initiative Observational Study (Journal of Gerontology: Medical Sciences, 2008)	Both obesity and comorbidity increased risk of frailty.

1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 12) 13) 15) 16) 22) 23) 30) 47)	4) 14) 24) 48) 71) 103) 129)	14) Frailty in older Mexican-American and European-American adults: is there an ethnic disparity? (The American Geriatrics Society, 2008)	Frailty was defined as three or more of five charachteristics: slow walking speed, weak grip strength, low energy expenditure, self-reported exhaustion, and weight loss.
1) 2) 3) 4) 6) 8) 9) 11)	1) 2) 4) 7) 10) 11) 17) 18) 30)	1) 2) 9) 21) 34) 36) 74) 126)	14) Frailty in older Mexican-American and European-American adults: is there an ethnic disparity? (The American Geriatrics Society, 2008)	Frailty is a geriatric syndrome that places older adults at risk for adverse health outcomes, such as falls, worsening disabilty, institutionalization, and death.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 8) 10) 12) 13) 15) 16) 30) 47)	4) 14) 24) 71) 103) 129)	14) Frailty in older Mexican-American and European-American adults: is there an ethnic disparity? (The American Geriatrics Society, 2008)	Frailty was operationalized as the presence of three or more of the following characteristics: slowness (slowest quintile on a timed walk), weakness (weakest quintile for grip strength), low energy expenditure (lowest quintile for energy expenditure obtained from the Minnesota Leisure Time Questionnaire), weight loss (10 pounds unintentionnally in the previous year), and exhaustion (by response to two questions on the Center for Epidemiologic Studies Depression Scale (CESD).
1) 4) 6) 8) 9) 10)	4) 12) 13) 19)	22) 53) 174) pas forcement lié au sexe ou au groupe ethnique, du fait des différences de composition physique	14) Frailty in older Mexican-American and European-American adults: is there an ethnic disparity? (The American Geriatrics Society, 2008)	The findings of the current study raise the possibility that, because frailty characteristics are standardized to body composition characteristics that vary systematically according to ethnic group, analogous to body composition variations according to sex, it is possible that the higher prevalence of frailty obseerved in ethnic minority groups using conventional criteria may be related in large part to ethnic differences in body composition and thus may not truly represent vulnerability to stress and decline (i.e., frailty).
1) 2) 4) 6) 8) 9) 10)	1) 2) 4) 7) 12) 19)	9) 12) 33) 124) 161) 175) différent du vieillissement	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	Frailty has emerged as a condition associated with an increased risk of functional decline among the elderly population, which may be differentiated from aging, disability, and comorbidity.
1) 4) 6) 8) 9) 11) 13)	1) 4) 10) 12) 13) 17) 18) 20) 37)	34) 36) 46) 49) 53) 87) 142)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	Frailty describes a state of vulnerability to the adverse effects of a variety of environmental stressors, expressed as an increased risk of accumulating health-related problems, hospitalization, need for long-term care, and death.
1) 3) 4) 6) 9) 11) 13)	1) 4) 8) 10) 11) 13) 31) 41)	41) 53) 69) 105)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	[...] Frailty is increased vulnerability due to impairments in multiple, inter-related systems resulting in homeostatic reserve disturbance.
1) 2) 3) 4) 5) 6) 8) 9) 11) 12) 14)	4) 6) 8) 10) 11) 12) 13) 16) 29) 30) 47)	4) 21) 24) 32) 121) 129)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	[...] Frailty as a clinical syndrome defined as the combination of shrinking, weakness, exhaustion, low walking speed, and low physical activity.

1) 4) 6) 7) 8) 9) 11) 12) 14)	1) 4) 7) 10) 13) 14) 21) 22) 23) 28) 51)	9) 30) 48) 56) 134) 186) 176) femme 177) plus faibles revenus	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	[...] Participants classified as frail were older [...], more likely to be female [...], and less educated [...], and they reported more chronic diseases [...], lower income [...], and poorer self-reported health status.
1) 4) 6) 7) 8) 9) 14)	4) 10) 14) 21) 23) 25) 50)	55) 178) moins bon score au test MMS ou IST (mémoire)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	[...] The frail subgroup had a lower MMSE score [...] and more depressive symptoms.
1) 2) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 10) 12) 13) 30)	1) 17) 19) 67)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	Disability for mobility, IADL, and ADL activities at baseline was also significantly more frequent.
1) 2) 3) 4) 5) 8) 9) 12) 14)	1) 2) 4) 6) 8) 11) 13) 17) 29)	1) 17) 19) 133) 142)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	The phenotype of frailty [...] was an independent predictor of the incidence of disability for IADL and ADL and of hospitalization.
1) 3)	1) 5) 8) 11)	118) 126) 149)	15) Frailty among community-dwelling elderly people in France: the three-city study (Journal of Gerontology: Medical Sciences, 2008)	Frailty may represent one extreme of a health continuum, and the inconsistency of an "intermediate condition" in predicting middle-term adverse outcomes could be explained by the longer duration of this status before "true frailty" and its consequences manifest.
1) 3) 4) 6) 7) 8) 9) 12)	1) 4) 8) 10) 11) 12) 13) 17) 18) 22) 23) 29)	21) 34) 36) 48) 54) 66) 121) 142)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Frailty is considered in geriatrics to be a clinical syndrome characterized by decreased resilience and physiological reserves. It is generally associated with a greater risk of health-related problems, hospitalization, and death.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 12) 13) 15) 16) 22) 23) 30) 47)	4) 14) 24) 32) 48) 71) 129)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Frailty is present when at least three of the following five components are identified: weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.
1) 2) 4) 6) 8) 9) 14)	1) 2) 4) 12) 13) 21) 26)	47) 126)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Cognition has already been considered as a component of frailty, and it has been demonstrated that it is associated with adverse health outcomes.

1) 2) 3) 4) 6) 7) 8) 9) 14)	2) 4) 8) 11) 12) 13) 14) 21) 23) 25) 26)	45) 47) 55)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Those classified as frail [...] reported significantly more depressive symptoms and subjective cognitive complaints.
4) 6) 8) 14)	10) 21) 50)	178)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	The frail subgroup showed worse performance on the IST [Isaacs Set Test] and MMSE tests [Mini Mental State Examination].
1) 2) 4) 5) 6) 8) 9) 14)	1) 2) 4) 6) 10) 12) 13) 17) 21) 25) 26) 50)	1) 17) 19) 34) 47) 142) 178) 179) démence	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Frail individuals with cognitive impairment have a higher risk of IADL and ADL disability and of incident hospitalization and dementia than subjects with none of these conditions.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	2) 3) 4) 6) 10) 12) 13) 15) 16) 21) 26) 30) 42)	3) 24) 31) 32) 47) 67) 68) 111)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	The interventions on Frailty Working Group has supported the consensus that criteria to define physical frailty should be based on the physiological domains most frequently cited in the frailty literature: mobility, muscle strength, motor processing, cognition, nutrition, endurance, and physical activity.
1) 2) 3) 4) 6) 8) 9) 14)	1) 2) 4) 7) 8) 11) 12) 13) 21) 26)	9) 33) 41) 47) 53)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	Considering that frailty is a heterogenous concept, adding the criterion of cognitive impairment results in better identification of elderly persons with intriisic vulnerability than when only the domains of physical function are considered.
4)	10)	145)	16) Cognitive impairment improves the predicitive validity of the phenotype of frailty for adverse health outcomes: the three-city study (The American Geriatrics Society, 2009)	It is generally believed that chronic inflammation plays a central role in the pathogenesis of frailty.
1) 4) 6) 8) 9)	4) 7) 12) 13)	9) 22) 53)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Frailty has been an imprecise and variously defined term used to indicate that heterogeneous group of older adults who undergo decline and are especially vulnerable.

1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	1) 2) 3) 4) 5) 6) 8) 10) 11) 12) 13) 15) 20) 21) 26) 27)	10) 31) 41) 46) 47) 53) 57) 58) 62) 106)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Strawbridge and colleagues conceived of frailty as "a grouping of problems and losses of capability wich make the individual more vulnerable to environmental challenge" and proposed an early frailty model based on deficiences in four domains of functioning (physical, nutritive, cognitive, and sensory). They developed this Functional Domains model of frailty in the Alameda County Study (ACS). The model was the first to combine deficits across these domains into a single measure.
1) 2) 3) 4) 6) 7) 8) 9) 10) 12)	1) 2) 3) 5) 10) 11) 12) 13) 14) 19) 23) 26) 29) 38)	1) 43) 56) 62) 92) 122)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Rockwood and colleagues developed a frailty index (FI) as a measure of deficit accumulation, that is, a measure of the cumulative burden of, for example, symptoms, diseases, conditions, and disability. They developed this Burden model of frailty in the Canadian Study of Health and Aging. In contrast to the Functional Domains model, the items that comprise the FI include but are not limited to conditions that are geriatric in nature.
1) 2) 3) 4) 5) 6) 7) 8) 9) 12) 13) 14)	1) 4) 6) 8) 10) 11) 12) 13) 29) 36) 37) 38) 40)	21) 22) 66) 87) 92) 100) 120) 128) 133)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Fried and colleagues postulated frailty to be a "biologic syndrome of decreased reserve to stressors, resulting from cumulative declines across multiple physiologic systems," and defined a frailty phenotype in terms of five components present in a hypothetized cycle of frailty.Two components are defined in terms of physical performance measures. They developed this Biologic Syndrome model of frailty in the Cardiovascular Health Study (CHS).14 The model was later replicated in the Women's Health and Aging Studies (WHAS) in women aged 70 to 79.
1) 2) 4) 6) 8) 9) 11) 14)	4) 7) 10) 13) 20) 21) 26) 28) 51)	29) 59) 134) 164) 171) 176) 177) 186) 180) isolement	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Respondents classified as frail generally were older; were more likely be female, from a minority ethnic group, and unmarried; has less education and a lower net worth; and were more likely to live alone.
1) 2) 4) 5) 6) 7) 9) 14)	1) 4) 6) 9) 10) 14) 15) 23) 26) 42) 48)	56) 111) 135) 141) 181) diabète	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Frail respondents had a greater prevalence of heart disease, lung disease, diabetes melitus, and musculoskeletal disorders.
1) 2) 4) 5) 6) 7) 9) 14)	1) 4) 6) 10) 14) 23)	18) 20) 30) 56)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Frail respondents also had greater prevalences of chronic diseases and of ADL and IADL dependencies.
1) 2) 9) 10)	1) 2) 19)	1) 124)	17) Comparing models of frailty: the Health and Retirement Study (The American Geriatrics Society,2009)	Frailty is theorized to be related to but distinct from disability.
1) 4) 6) 8) 9) 13)	1) 4) 7) 10) 12) 13) 18) 37)	1) 9) 22) 35) 53) 87)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	This vulnerable population, referred to as frail, has been identified as older adults with an intrinsic vulnerability to stressors and high risk for decline and adverse healthrelated characteristics such as disability and comorbidity.
1) 3) 4) 6) 8) 9) 12) 13)	1) 4) 10) 11) 12) 13) 36) 37)	21) 22) 53) 54) 66) 87) 120) 126)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	Frailty is a biological syndrome of low reserve and resistance to stressors resulting from cumulative declines across multiple physiological systems that cause vulnerability to adverse outcomes.
1) 2) 3) 4) 6) 7) 8) 9) 11) 12) 14)	1) 2) 4) 5) 8) 10) 11) 12) 13) 15) 17) 18) 22) 23) 29) 30)	1) 4) 14) 24) 36) 48) 71) 74) 101) 122) 133) 142)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	Fried et al. Proposed a phenotype of frailty involving at least three of the following five components: unintentional weight loss, self-reported low energy level, weak grip strength, slow walking speed, and a low level of physical energy. Using a frailty index based on this phenotype, Fried et al. and other researchers have reported its association with falls, hospitalization, disability, and death.

1) 4) 6) 7) 9) 12)	4) 7) 10) 13) 14) 22) 23)	9) 30) 48)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	Older age, greater number of chronic medical conditions and worse self-reported health were associated with greater frailty.
1) 2) 4) 5) 6) 8) 9) 14)	2) 4) 6) 12) 13) 21) 26)	10) 47)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	Greater impairments in physical [...] and cognitive function [...] were associated with greater frailty.
1) 4) 6) 7) 9) 14)	4) 14) 23) 25)	55)	18) Validation and comparison of two frailty indexes: The MOBILIZE Boston Study (The American Geriatrics Society, 2009)	Frailty was associated with higher depression scores.
1) 2) 3) 4) 5) 6) 7) 8) 9) 10) 11) 12) 14)	4) 5) 6) 8) 10) 11) 12) 13) 15) 16) 18) 19) 22) 23) 29) 30) 47)	4) 14) 21) 24) 32) 48) 71) 121) 123) 124) 129) 149)	19) A frailty index to predict the mortality risk in a population of senior Mexican adults (BMC Geriatrics, 2009)	One approach, proposed by Fried et al, considers frailty a distinct clinical syndrome not synonymous with either co morbidity or disabiltiy. Under this perspective, frailty is present when an individual has three of the following criteria: unintentional weight loss (10 lbs in past years), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity. Additionally, an intermediate status (prefrailty) is also identified when the individual presents one or two of the above criteria.
1) 3) 4) 6) 7) 8) 9) 12)	1) 5) 8) 10) 11) 12) 13) 14) 23) 29) 38)	56) 92) 118) 122)	19) A frailty index to predict the mortality risk in a population of senior Mexican adults (BMC Geriatrics, 2009)	The other approach, proposed by Mitnitski and Rockwood, considers frailty as a continuum of accumulation of deficits (symptoms, signs, diseases, and disabilities) that are combined in a frailty index score, reflecting the proportion of potential deficits present in a person.
1) 4) 6) 8) 9) 14)	4) 7) 10) 12) 13) 15) 42)	9) 23) 182) plus faible densité musculaire 183) masse grasse plus élevée	19) A frailty index to predict the mortality risk in a population of senior Mexican adults (BMC Geriatrics, 2009)	Studies using Fried's frailty definition have found that frail older adults have lower muscular density and muscle mass and higher fat mass than non frail elderly.
1) 2) 3) 4) 6) 7) 8) 9) 11) 13)	1) 2) 10) 11) 17) 18) 23) 30) 45)	1) 21) 34) 35) 36) 74) 142) 152) 184) poly médication	20) A frailty instrument for primary care: findings from the Survey of Health, Ageing and retirement in Europe (SHARE) (BMC Geriatrics, 2010)	Frailty is an emerging geriatric syndrome, and its associations include falls, disability, morbidity, mortality and excess healthcare costs from consultations, polypharmacy, hospitalizations and institutionalisations.
1) 2) 4) 5) 6) 7) 8) 9) 14)	1) 4) 6) 7) 10) 12) 13) 14) 23) 25)	9) 18) 53) 55) 57) 185) détériore la qualité de vie	20) A frailty instrument for primary care: findings from the Survey of Health, Ageing and retirement in Europe (SHARE) (BMC Geriatrics, 2010)	Frailty confers loss of independence, vulnerability and impairs the quality of life and psychological well-being of many older people.
3) 12)	8) 11) 29)	14) 41) 121)	20) A frailty instrument for primary care: findings from the Survey of Health, Ageing and retirement in Europe (SHARE) (BMC Geriatrics, 2010)	Frailty is an entity recognised by clinicians, with multiple manifestations and with no single symptom being sufficent or essential in its presentation.
4) 6) 9)	51)	186) genre (manifestation différentes chez mâles et femelles)	20) A frailty instrument for primary care: findings from the Survey of Health, Ageing and retirement in Europe (SHARE) (BMC Geriatrics, 2010)	[...] Frailty could have a gendered dimension and manifest differently in males and females.

4) 6) 8) 12)	4) 7) 10) 36)	83)	20) A frailty instrument for primary care: findings from the Survey of Health, Ageing and retirement in Europe (SHARE) (BMC Geriatrics, 2010)	[...] Frailty is more about the biological age than the chronological age of individuals.
1) 3) 4) 6) 8) 9)	4) 8) 11) 12) 13)	22) 41) 53)	21) Circulating 25-hydroxyvitamin D levels and frailty in older men: the osteoporotic fractures in men study (The American Geriatrics Society, 2011)	[...] Frailty (a term indicating multisystem impairment and expanding vulnerability).
1) 2) 4) 6) 8) 9) 11) 14)	1) 2) 4) 7) 10) 18) 30) 42)	1) 9) 36) 74) 126) 173)	21) Circulating 25-hydroxyvitamin D levels and frailty in older men: the osteoporotic fractures in men study (The American Geriatrics Society, 2011)	[...] Older individuals classified as frail have a higher risk of adverse outcomes, including disability, falls, fractures, and mortality.
1) 2) 4) 5) 6) 8) 9) 11) 14)	4) 6) 10) 12) 13) 15) 30)	4) 24) 132)	21) Circulating 25-hydroxyvitamin D levels and frailty in older men: the osteoporotic fractures in men study (The American Geriatrics Society, 2011)	Components of frailty such as weakness and slowness are potential sequelae of vitamin D deficiency.
4) 14)	10) 15)	132)	21) Circulating 25-hydroxyvitamin D levels and frailty in older men: the osteoporotic fractures in men study (The American Geriatrics Society, 2011)	[...] Men with 25(OH)D levels less than 20.0ng/mL had greater odds of greater prevalent frailty status.
1) 2)	1) 2)	1) 126) 152)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	Disability in Activities of Daily Living (ADL), [...], is an adverse outcome of frailty that places a high burden on frail individuals, care professionals and health care systems.
1) 2)	1) 2)	1)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	Frail elderly people have a higher risk of ADL disability compared to non-frail elderly people.
1) 2) 3) 4) 6) 8) 9) 11) 14)	2) 4) 8) 10) 11) 12) 13) 15) 20) 21) 26) 28)	12) 31) 41) 47) 59) 66)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	Various physical, cognitive, physiological, nutritional and social factors have been claimed to contribute to frailty.
1) 3) 4) 6) 8) 9) 12) 13)	1) 4) 10) 11) 12) 13) 36) 37)	21) 22) 53) 54) 66) 87) 120) 126)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	A biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative decline across multiple physiologic systems, and causing vulnerability to adverse outcomes.

1) 2) 3) 4) 5) 6) 8) 9) 11) 12) 14)	1) 2) 4) 5) 6) 7) 8) 10) 11) 12) 13) 15) 16) 29) 30) 40) 47)	1) 4) 9) 14) 24) 32) 71) 100) 129) 133) 149) 159)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	The frailty phenotype postulates that five indicators of physical functioning (unintentional weight loss, exhaustion, slow walking speed, low grip strength, and low physical activity) are related to each other in a cycle of frailty. A person with none of the indicators is robust, a person with 1 or 2 indicators is pre-frail, and a person with 3 or more indicators is frail. Elderly people who are frail according to the phenotype have a higher risk of disability.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	3) 4) 6) 10) 12) 13) 15) 16) 27) 30) 47)	3) 4) 24) 26) 32) 71) 129) 165)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	[...] Physical frailty indicators terms such as "grip strength", "weight loss", "balance", "exhaustion", "walking speed", "gait", "physical activity".
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	3) 4) 6) 10) 12) 13) 15) 16) 27) 30) 42) 44) 47)	3) 4) 5) 6) 24) 25) 26) 32) 71) 129) 170) 187) tour complet sur soi-même 188) se pencher en avant 189) signer à la main	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	A variety of physical frailty indicators was measured in the included studies: weight loss, exhaustion, gait speed/ walking speed/gait, muscle strength/ grip strength, physical activity, balance, lower extremity function, chair stand, 360° turn, bending over, foot taps, and hand signature.
1) 2) 3) 4) 6)	1) 2) 3) 4) 7)	1) 3) 9)	22) Predicting ADL disability in community-dwelling elderly people using physical frailty indicators: a systematic review (BMC Geriatrics, 2011)	Physical frailty indicators are predictors of ADL disability in communitydwelling elderly people aged 65 years and older.
1) 3) 4) 6) 7) 8) 9) 12)	4) 8) 10) 11) 12) 13) 29) 38)	41) 92) 133)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	Different conceptual definitions of frailty have been reported, i.e., phenotypic, accumulation of deficits, and multiple domain aggregate or multidimensional.
1) 3) 4) 6) 8) 9)	1) 4) 7) 8) 10) 11) 12) 13) 17) 18)	22) 29) 34) 36) 53) 104) 126)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	[...] Frailty as a dynamic age-related condition of increased vulnerability characterized by declines across multiple physiologic systems and associated with an increased risk of negative outcomes, i.e., institutionalization and death.
1) 4) 6) 9)	1) 4) 7) 13) 18)	9) 36) 116)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	Frail was demonstrated to be the most common condition leading to death in older people.
4) 6) 9)	10) 51)	176) 186)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	Women demonstrated a significantly higher level of frailty than men.
1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 14)	2) 4) 6) 8) 10) 11) 12) 13) 14) 15) 16) 20) 21) 23) 25) 26) 28) 30)	24) 31) 32) 41) 47) 55) 59) 67) 101)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	[...] A list of eight frailty risk factors that are mentioned to be of great importance to the concept of frailty were indentified, including in the physical dimension: nutritional status, physical activity, mobility, strength and energy, in the psychological dimension: cognition and mood, and in the social dimension: lack of social contacts and social support.

1) 2) 4) 6) 8) 11)	1) 10) 17) 30)	34) 74) 126)	23) Comparing the prognostic accuracy for all-cause mortality of frailty instruments: a multicentre 1-year follow-up in hospitalized older patients (Plos One, 2012)	[...] Adverse outcomes traditionally linked to frailty such as falls or institutionalization.
1) 2) 4) 5) 6) 7) 8) 9) 12) 14)	1) 4) 6) 7) 10) 12) 13) 14) 23) 25) 26) 33) 36) 42) 48) 50)	10) 29) 30) 50) 55) 83) 120) 190) infarctus du myocarde 191) insuffisance rénale 192) accident vasculaire cérébral 193) arthrose (coxarthrose et gonarthrose)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	Frailty is a consequence of biological changes related to aging and the occurrence of one or more chronic conditions and their complications including functional impairment. The chronic conditions most frequently associated with frailty are heart failure, renal impairment, stroke, osteoarthritis of hip and knee, and depression.
1) 4) 6) 8) 9) 13)	1) 4) 7) 10) 12) 13) 37)	9) 22) 27) 29) 53) 66) 87) 102) 148)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	A consensus conference defined frailty as " a state of increased vulnerability to stressors due to agerelated decline in physiologic reserve across neuromuscular, metabolic, and immune systems".
1) 2) 4) 5) 6) 8) 9) 11) 14)	4) 6) 10) 12) 13) 15) 26) 30)	10) 24) 31) 67) 68)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	[...] Many operational definitions of frailty include alterations in mobility, strength, endurance, nutrition, and physical activity.
1) 2) 4) 5) 6) 7) 8) 9) 11) 14)	1) 4) 6) 10) 16) 17) 18) 23) 30) 32)	18) 34) 36) 49) 74) 78) 79) 142) 194) blessures 195) risque de guérison (de n'importe qu'elle maladie) lente	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	Frail individuals are at high risk for dependency, institutionalization, falls, injuries, hospitalization, slow recovery from any illness and mortality. They are therefore most in need of health care and community and informal support services.
1) 2) 3) 4) 6) 7) 8) 9) 12) 13)	1) 2) 4) 7) 8) 10) 11) 13) 14) 23) 29) 36) 45)	1) 9) 53) 56) 115) 120) 133)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	They describe frailty 1) as resulting from the burden of multiple diseases and disabilities; 2) as a distinct biological entity resulting in a frailty phenotype; and 3) by the selection of vulnerable elderly people who are evaluated for the allocation of medical treatment and care.
4) 6)	4) 7)	9)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	[...] Age as a major frailty risk factor.
1) 4) 6) 7) 9)	1) 10) 14) 18) 23)	35) 56)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	[...] Multi-morbidity or disabilities as a determining factor for frailty.
1) 4) 6) 7) 9)	1) 10) 14) 23)	30) 56)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	Most frail people do have chronic diseases, and there is a significant trend of increasing prevalence of frailty in persons with more diseases.

1) 4) 6) 8) 9)	4) 12) 13)	50)	24) The frailty dilemma. Review of the predictive accuracy of major frailty scores (European Journal of Internal Medicine, 2012)	[...] The presence of one or more functional disabilities as main frailty risk factor.
1) 3) 4) 6) 8) 9) 12) 13)	1) 4) 7) 8) 10) 11) 12) 13) 29) 37)	9) 21) 29) 54) 87) 121) 126)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Frailty has been hypotetized to be a geriatric syndrome that is recognized by clinicians and characterized by decreased resilience to stressors, causing increased risk of age-related complications and outcomes.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 8) 10) 12) 13) 15) 16) 30) 47)	4) 14) 24) 32) 71) 129)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	[...] Defined as the presence of three or more of five characteristics: weight loss, exhaustion, low physical activity, weakness, and slowness.
1) 2) 4) 6) 8) 9) 11)	1) 2) 10) 17) 18) 30)	1) 34) 36) 74) 126)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Frail individuals have been shown to be at risk for adverse outcomes, such as falls, disability, institutionalization, and death.
4) 7) 14)	10) 14) 15)	181)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	[...] Diabetes plays a pervasive role in frailty worsening.
4) 6) 8) 13) 14)	10) 15) 31) 36)	196) hypoglycémie à jeun	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	[...] Fasting hypoglycemia is associated with frailty in individuals without diabetes.
4) 7) 14)	10) 14) 15)	181)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	[...] Associations between frailty and insulin resistance and diabetes.
1) 4) 6) 7) 9) 14)	1) 4) 10) 14) 23) 48) 50)	56) 135) 190) 192) 197) pathologie vasculaire périphérique	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Frailty has also been linked with other diseases, such as cardiovascular disease, congestive heart failure, peripheral vascular disease, and stroke.
1) 4) 6) 8) 11) 14)	4) 10) 21) 28)	134) 160)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Fewer years of education, a key indicator of SES [socioeconomic status], is also a significant predictor of worsening in any individual frailty characteristic.
1) 4) 6) 11)	10) 28)	160) 177)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Low SES is associated with prevalent and incident frailty.
1) 4) 6) 7) 9) 11) 14)	1) 10) 14) 15) 20) 23) 28)	30) 31) 56) 145) 160) 198) moins bon accès aux soins médicaux	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	A potential mechanism explaining this low SES-frailty association is increased inflammation, wich is thought to be a major physiologic alteration operant in frailty, and wich may result from poorer nutritional status, less access to medical care, and higher prevalence of chronic disease among lower SES individuals.

1) 2) 3) 4) 5) 6) 8) 9) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 29)	24) 31) 32) 133)	25) Frailty transitions in the San Antonio Longitudinal Study of Aging (The American Geriatrics Society,2012)	Characteristics of the frailty phenotype include the domains of physical activity, muscle strength, and nutrition.
1) 4) 6) 8) 9) 13)	1) 4) 10) 12) 13) 37)	22) 53) 87) 126)	26) The frailty index in Europeans: association with age and mortality (Age and Ageing (Oxford Journals), 2012)	Frailty is a non-specific state of dysregulation in multiple physiological systems, vulnerability to stressors and increased risk of adverse outcomes.
4) 6) 8) 12)	4) 7) 10) 36)	9) 29) 83)	26) The frailty index in Europeans: association with age and mortality (Age and Ageing (Oxford Journals), 2012)	Frailty increases with age, it is more related to the biological than the chronological age of individuals.
1) 4) 6) 8) 9)	12) 13)	24)	26) The frailty index in Europeans: association with age and mortality (Age and Ageing (Oxford Journals), 2012)	Grip strength [...] was retained as it is known to be an important objective marker of frailty.
9) 10)	13) 19)	43)	26) The frailty index in Europeans: association with age and mortality (Age and Ageing (Oxford Journals), 2012)	The relationship between frailty and mortality was independent of age and other covariates.
1) 4) 6) 8) 9) 13)	1) 4) 10) 12) 13) 37)	53) 66) 87) 126)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	Frailty is characterized by a lack of physiological reserve, an increased vulnerability to stressors and a subsequent risk for adverse health outcomes.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 10) 11) 12) 13) 15) 30) 47)	4) 5) 21) 24) 71) 129)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	[...] frailty as a syndrome consisting of involuntary weight loss, exhaustion, low activity level, weakness, and slow gait.
1) 2) 4) 6) 7) 8) 9) 11) 14)	1) 2) 4) 10) 14) 17) 18) 23) 25) 30) 42)	1) 34) 36) 55) 74) 126) 142) 173)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	Older frail adults are at increased risk for various adverse health outcomes, including disability, falls, fractures, hospitalizations, death, and depression.
1) 4) 6) 7) 9) 14)	4) 7) 14) 23) 25)	9) 55)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	A significantly higher proportion of frail elders experience depressive symptoms compared to nonfrail older adults.

1) 4) 6) 7) 9) 14)	1) 10) 14) 23) 50)	56) 199) maladie de parkinson	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	Parkinson's disease [...], wich could manifest as frailty
1) 4) 6) 7) 9) 14)	4) 7) 10) 14) 23) 25) 51)	9) 55) 176)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	A strong association between depression and incident frailty in older adult women.
1) 2) 4) 5) 6) 8) 9) 14)	1) 2) 4) 6) 10) 12) 15) 16) 17) 18) 26) 47)	1) 10) 32) 36) 49) 71) 126) 129) 142)	27) Antidepressant use, depressive symptoms, and incident frailty in women aged 65 and older from the Women's Health Initiative Observational Study (The A merican Geriatrics Society, 2012)	Both frailty and depression are associated with inactivity, weight loss, reduced physical activity, and exhaustion, in addition to negative long-term health consequences, such as physical disability, hospitalization, and mortality.
1) 2) 3) 4) 6) 8) 9) 13)	1) 2) 4) 10) 11) 12) 13) 17) 18) 37)	1) 21) 34) 35) 54) 87) 126)	28) Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double blind, placebo-controlled trial (Journal of the American Medical Directors Association (JAMDA), 2012)	Frailty is a geriatric syndrome of decreased reserves and resistance to stressors that increases the risk for adverse outcomes, such as the onset of disability, morbidity, and institutionalization.
4) 14)	10) 42)	146)	28) Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double blind, placebo-controlled trial (Journal of the American Medical Directors Association (JAMDA), 2012)	An important and fundamental component of frailty is sarcopenia.
1) 2) 3) 4) 6) 8) 9) 11)	1) 2) 4) 7) 8) 10) 17) 18) 30)	1) 9) 14) 36) 74) 142)	28) Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double blind, placebo-controlled trial (Journal of the American Medical Directors Association (JAMDA), 2012)	[...] Elderly subjects who met the defined frailty criteria. These criteria have been reported to be highly predictive for falls, hospitalization, disability, and mortality.

1) 2) 3) 4) 5) 6) 7) 8) 9) 14)	1) 2) 4) 6) 7) 8) 10) 11) 12) 13) 14) 17) 18) 23)	1) 9) 18) 21) 22) 29) 30) 34) 35) 36) 56) 102) 116) 118) 126) 148)	29) Comparison of frailty indicators based on clinical phenotype and the multiple deficit approach in predicting mortality and physical limitation (The American Geriatrics Society, 2012)	Frailty represents a state of multisystem impairments that increases the risk of adverse outcomes such as disability, morbidity, dependence, and institutionalization. It may be viewed as a syndrome contributed to by physiological decline with aging; dysregulation of the endocrine, metabolic, and immune systems; and common age-related chronic diseases, representing a continuum from normal aging to a final state of disability and death.
2) 4) 5) 14)	4) 6) 10)	128)	29) Comparison of frailty indicators based on clinical phenotype and the multiple deficit approach in predicting mortality and physical limitation (The American Geriatrics Society, 2012)	[...] Physical performance measure as an indicator of frailty.
1) 2) 4) 5) 6) 7) 8) 9) 13) 14)	1) 2) 4) 6) 7) 10) 12) 13) 14) 15) 17) 21) 23) 25) 26) 27) 33) 34) 42) 45)	9) 10) 12) 22) 47) 50) 55) 56) 58) 76) 142) 181) 184) 193) 200) pathologies respiratoires	30) Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline (Revista Española de Geriatria y Gerontologia, 2012)	The following criteria were associated with frailty: age, respiratory diseases, arthritis, diabetes, sensory deficits, urinary and faecal incontinences, polypharmacy, hospitalization in the past year, functional impairment, cognitive decline and depressive symptoms.
1) 2) 4) 6) 8) 9) 13)	1) 2) 4) 7) 10) 12) 13) 17) 18) 37)	1) 9) 22) 36) 53) 54) 66) 87) 126) 142)	30) Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline (Revista Española de Geriatria y Gerontologia, 2012)	[...] la fragilidad es un proceso caracterizado por la disminucion de las reservas fisiologicas y la resistencia que hace que los mayores pierdan capacidad de adaptacion al estresambiental y sean mas vulnerable a efectos adversos de salud, tales como mortalidad, discapacidad y hospitalizacion.
1) 2) 3) 4) 5) 6) 8) 9) 11) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 29) 30)	4) 14) 21) 24) 32) 71) 101) 121)	30) Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline (Revista Española de Geriatria y Gerontologia, 2012)	El sindrome de fragilidad se evalua mediante 5 criterios clinicos: perdida de peso no intencional, debilidad muscular, baja energia, marcha lenta y escasa actividad fisica.
1) 3) 4) 6) 8) 14)	10) 11) 21) 25) 50)	21) 179)	30) Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline (Revista Española de Geriatria y Gerontologia, 2012)	[...] associacion entre el sindrome de fragilidad y la enfermedad de Alzheimer y otros encuentran el sindrome de fragilidad puede constituir un factor de riesgo para la demencia.
1) 2) 4) 5) 8) 9) 10) 11) 14)	4) 6) 19) 32)	18) 201) différence entre la dépendance et la fragilité (mais associés)	30) Differences in the expression of the frailty syndrome in institutionalized elderly men and women with no severe cognitive decline (Revista Española de Geriatria y Gerontologia, 2012)	Con respecto a la relacion entre la fragilidad y la dependencia, los resultados muestran que ser fragil se asocia con dependencia para las ABVD; pero tambien, que fragilidad y dependencia son fenomenos independientes.

1) 4) 6) 7) 8) 9)	1) 10) 12) 13) 14) 18) 23)	24) 35) 36) 56)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	It is characterised by a general lack of strength and increased susceptibility to disease, and is associated with increased mortality and morbidity.
1) 2) 4) 6) 8)	1) 2) 12) 17)	12) 33) 34) 126) 142)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	Frailty is also associated with an increased risk of adverse events occuring during hospitalization and functional decline post-hospitalization.
4) 6) 14)	4) 7) 10) 15)	9) 31)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	[...] Older people who are undernourished are more likely to be frail.
4) 14)	10) 15)	31)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	[...] Undernutrition and frailty can contribute to each other.
1) 2) 4) 6) 8) 9) 11)	1) 10) 12) 13) 30)	24) 74)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	[...] Problems associated with frailty, including reduced musde strength and fall risk.
4) 6) 9)	7) 10) 51)	29) 176)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	Older women [...] have higher levels of frailty.
1) 2) 4) 6) 8) 9) 14)	2) 4) 7) 10) 12) 13) 15) 21) 26)	29) 31) 47)	31) Use of the Mini Nutritional Assesment to detect frailty in hospitalized older people (The Journal of Nutrition, Health and Aging, 2012)	[...] Low cognition has been found to be associated with undernutrition and frailty in older people.
1) 2) 3) 4) 6) 7) 8) 9) 11) 12) 13)	1) 2) 4) 7) 8) 10) 12) 13) 17) 18) 29) 30) 36) 37) 38)	1) 9) 34) 36) 53) 74) 87) 92) 120) 121) 126) 142)	32) The SHARE Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe predicts mortality similarly to a failty index based on comprehensive geriatric assessment (Geriatrics and Gerontology International, 2013)	Frailty in older adults is a key clinical concept characterized by dysregulation of multiple biological systems, accumulation of deficits, vulnerability to stressors and increased risk of adverse outcomes such as falls, disability, hospitalization, institutionalization and death.

1) 2) 3) 4) 5) 6) 7) 8) 9) 11) 12) 14)	4) 6) 8) 10) 11) 12) 13) 15) 16) 22) 23) 29) 30) 47)	4) 14) 21) 24) 32) 48) 71) 121) 129) 133)	32) The SHARE Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe predicts mortality similarly to a failty index based on comprehensive geriatric assessment (Geriatrics and Gerontology International, 2013)	According to the phenotypic approach, frailty is defined as a clinical syndrome in which three or more of the following criteria are present: unintentional weight loss, self-reported exhaustion, weakness, slow walking speed, and low physical activity.
1) 3) 4) 6) 7) 8) 9) 12)	5) 10) 11) 12) 13) 29) 38)	92) 122)	32) The SHARE Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe predicts mortality similarly to a failty index based on comprehensive geriatric assessment (Geriatrics and Gerontology International, 2013)	Another way to operationalize frailty is by counting in an individual the number of deficits that he/she has accumulated from a given list (of usually 40 or more potential deficits). The number of counted deficits divided by the number of deficits considered results in a score called frailty index (FIx), which ranges from 0 (i.e. none of the deficits present) to 1 (i.e. all deficits present).
1) 3) 4) 6) 8) 9) 12)	1) 4) 8) 11) 13) 18) 29) 36) 40)	36) 41) 100) 120) 133)	32) The SHARE Frailty Instrument for primary care of the Survey of Health, Ageing and Retirement in Europe predicts mortality similarly to a failty index based on comprehensive geriatric assessment (Geriatrics and Gerontology International, 2013)	[...] The variables defining the frailty phenotype, wich are based on biological theory (i.e. the cycle of frailty), are in fact a good 'summary' of the multiple system dysregulation that occurs in frailty, at least as far as mortality prediction goes.
1) 4) 6) 8) 9) 13)	1) 4) 10) 12) 13) 37)	22) 53) 54) 57) 87)	33) The predictive properties of frailty-rating scales in the acute medical unit (Age and Ageing (Oxford Journals), 2013)	Frailty is a state of loss of resistance to external stressors leading to extreme vulnerability and subsequent decline.
1) 2) 4) 5) 6) 8) 9) 11) 14)	1) 2) 4) 6) 10) 12) 13) 17) 18) 30)	12) 33) 34) 36) 50) 67) 142)	33) The predictive properties of frailty-rating scales in the acute medical unit (Age and Ageing (Oxford Journals), 2013)	In community populations, frailty is associated with an increased risk of functional decline, death, hospitalisation and worsening mobility.
1) 3) 4) 9)	1) 4) 8) 11) 13)	41) 53) 126)	34) Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality (The American Geriatrics Society, 2013)	Frailty is recognized as a multiply determined, increased vulnerability to a range of adverse health outcomes.
1) 2) 4) 6) 8) 9) 14)	1) 2) 4) 12) 13) 17) 18) 21) 26)	1) 34) 36) 47) 74) 126) 142)	34) Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality (The American Geriatrics Society, 2013)	Frailty is associated with falls, cognitive impairment, disability, hospitalization, institutionalization, and death, as well as adverse responses to chemotherapy, surgical intervention, and after emergency department discharge.

1) 3) 4) 6) 7) 9) 12)	1) 4) 7) 8) 10) 11) 13) 14) 18) 29)	9) 30) 36) 116) 133)	34) Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality (The American Geriatrics Society, 2013)	Frailty was demonstrated to be the most common chronic condition leading to death in older adults when it was defined based on a modified frailty phenotype using data from comprehensive assessments.
1) 3) 4) 6) 7) 8) 9) 12)	8) 10) 11) 12) 13) 36) 38)	21) 22) 41) 92) 120)	34) Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality (The American Geriatrics Society, 2013)	[...] Frailty as a biological syndrome resulting from cumulative decline across multiple physiological systems.
			34) Operationalization of frailty using eight commonly used scales and comparison of their ability to predict all-cause mortality (The American Geriatrics Society, 2013)	[...] Frailty as a multidimensional risk state that can be measured more by the quantity than by the nature of health problems.
1) 3) 4) 6) 8) 9) 13)	1) 4) 8) 10) 11) 12) 13) 31) 37)	22) 41) 53) 54) 69) 87)	35) Evaluation of the Groningen Frailty Indicator and the G8 questionnaire as screening tools for frailty in older patients with cancer (Journal of Geriatric Oncology, 2013)	The core feature of frailty is increased vulnerability to stressors due to impairments in multiple, inter-related systems that lead to dedine in homeostatic reserve and resiliency.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 7) 10) 11) 12) 13) 15) 16) 30) 47)	4) 9) 21) 24) 32) 71) 129)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	Frailty is a geriatric syndrome operationally defined by Fried and colleagues as the presence of slowness, weakness, exhaustion, low physica activity, and unintentional weight loss.
1) 2) 4) 6) 8) 9) 11)	1) 2) 10) 17) 18) 30)	1) 34) 36) 74) 142)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	[...] People with frailty have higher risks of subsequent disability, falls, hospitalization, and death than those without frailty.
1) 2) 4) 5) 6) 8) 9) 14)	4) 6) 12) 13)	5) 24)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	[...] grip strength and gait speed, wich are components of frailty.
1) 4) 6) 8) 9) 14)	4) 7) 10) 12) 13) 42)	9) 23) 24) 29) 146)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	A primary cause of frailty might be sarcopenia, the age-related loss of muscle mass and strength.
4) 13) 14)	10) 15) 52) prévention (204 - 209)	31) 204)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	[...] Protein intake has been inversely associated with frailty.

1) 4) 6) 7) 9) 14)	1) 10) 14) 15) 23) 42) 48) 50)	30) 56) 181) 190) 192) 193) 202) hypertension atérielle	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	A history of chronic disease, including stroke, myocardial infarction, hypertension, diabets, and chronic rheumatism, were considered to be factors which influenced the current state of frailty.
4) 6) 7) 9) 10) 14)	4) 7) 10) 15) 19) 49)	9) 140) 162) 203) moins de consommateurs d'alcool	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	The frail group was significantly older, had a higher BMI, and included more current smokers and less alcohol drinkers.
1) 4) 6) 7) 9) 14)	1) 4) 10) 14) 23) 25)	30) 55) 56)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	Further, a higher proportion of subjects with frailty had a history of chronic disease and depression symptoms.
4) 14)	10) 15)	31)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	Low intake of total protein was significantly associated with frailty.
4) 13) 14)	15) 52)	204) risque diminué par la consommation élevée de protéines	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	High intake of protein was associated with lower risk of frailty.
4) 13) 14)	15) 52)	204)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	The intake of total protein was inversly associated with frailty.
4) 14)	10) 15)	131)	36) High protein intake is associated with low prevalence of frailty among old Japanese Women: a multicenter cross-sectional study (Nutrition Journal, 2013)	Vitamin E, vitamin C, and folate were also associated with frailty.
1) 2) 3) 4) 6) 7) 8) 9) 11) 12) 13) 14)	1) 2) 4) 7) 8) 9) 10) 13) 14) 17) 18) 20) 23) 26) 27) 28) 29) 45) 48)	1) 9) 29) 30) 34) 35) 36) 56) 58) 59) 121) 141) 142) 184) 190) 205) pré clinique	37) Long-term mortality in frail elderly subjects with osteoarthritis (Rheumatology (Oxford Journals), 2014)	Frailty is currently considered as primary or pre-clinical when the physiological state is not associated directly with a specific disease or when there is no substantial disability. In contrast, frailty is considered secondary or clinical when it is associated with a known co-morbidity and/or disability. The characteristics of dinical frailty include not only co-morbidity and disability, but also polypharmacotherapy and relative adverse drug reactions, hospitalization, health service utilization, age-associated sensory deficits and lack of social support. This condition is associated with higher long-term mortality alone and along with chronic diseases such as chronic heart failure and chronic obstructive pulmonary disease.

1) 2) 4) 5) 6) 8) 14)	4) 6) 7) 10) 12) 15) 16)	9) 32) 71) 101) 158) 162)	37) Long-term mortality in frail elderly subjects with osteoarthritis (Rheumatology (Oxford Journals), 2014)	[...] Frail elderly were considered as inactivity/low energy, inactivity/ weight loss and inactivity/low BMI.
1) 2) 3) 4) 6) 8) 9) 14)	1) 2) 4) 8) 10) 11) 12) 13) 21) 26)	21) 41) 47) 53) 57) 66) 126)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Frailty is a term widely used to describe a multidimensional syndrome characterized by the loss of physiologic and cognitive reserves that gives rise to heightened vulnerability to adverse outcomes.
1) 2) 4) 6) 7) 8) 9) 11)	1) 2) 4) 10) 13) 14) 17) 18) 23) 24) 30)	1) 34) 36) 52) 56) 74) 142)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Adverse events associated with frailty include incident falls, susceptibility to acute illness, perioperative complications, unplanned hospital admissions, disability, need for institutional care, and death.
1) 2) 4) 5) 6) 7) 8) 9) 11) 14)	1) 2) 4) 6) 10) 12) 17) 23) 26) 32)	18) 33) 86) 185) 206) utilisation de services de santé	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Frailty has substantial implications for quality of life, functional autonomy and health services utilization.
1) 2) 4) 6) 7) 8) 9) 11)	1) 2) 4) 7) 10) 13) 14) 18) 20) 23) 26) 28) 32) 51)	9) 29) 56) 59) 86) 123) 176) 186)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Frail patients were older, were more likely to be female, had more comorbid disease and greater functional dependence, and tended to have fewer social supports.
1) 4) 8)	1) 17)	49) 142)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Frailty was associated with significantly longer durations of stay in both ICU [intensive care units] and hospital.
1) 4) 8)	1) 17)	126) 142) 207) plus grand risque de réadmission à l'hôpital	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	After hospital discharge, frail patients had a greater rate of hospital re admission.

2) 4) 5) 14)	4) 6)	18)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	After hospital discharge, frail patients were less likely than nonfrail patients to be living at home independently.
1) 4) 6) 7) 8) 9)	1) 10) 17) 23)	49) 206)	38) Association between frailty and short - and long-term outcomes among critically ill patients: a multicentre prospective cohort study (Canadian Medical Association Journal, 2014)	Frailty is associated with high health service utilization, with most expenditures related to long-term care and in-patient care at the end of life.
3) 4) 6) 9) 12)	4) 7) 8) 10) 11) 13) 29)	9) 29) 41) 53) 133)	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	Frailty, a phenotype of multisystem impairment and expanding vulnerability, becomes more prevalent with increasing age.
1) 4) 6) 8) 9)	1) 4) 7) 10) 12) 18)	9) 29) 33) 35) 123) 126)	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	Older persons characterized as frail have a higher risk of adverse health outcomes not entirely explained by advancing age, poorer functional status, and greater prevalence of comorbid conditions.
1) 2) 3) 4) 5) 6) 8) 9) 11) 14)	4) 6) 8) 10) 12) 13) 15) 16) 30)	4) 14) 24) 32) 68) 71) 101)	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	Frailty is defined by the presence of three or more of the following criteria: unintentional weight loss, poor endurance or energy, weakness, slow walking speed, and low physical activity.
1) 4) 6) 7) 8) 9) 11) 12) 14)	1) 4) 10) 13) 21) 22) 23) 28) 41) 49)	48) 134) 140) 164) 208) multiple problèmes de santé	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	Frail participants were on average less educated, less likely to be married, more likely to smoke, more likely to rate their health as fair/poor/very poor, and more likely to have multiple medical conditions.
4) 14)	10) 15)	158) 162)	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	Frail men were more likely to have a body mass index< 25 kg/m²
4) 13) 14)	15) 52)	209) associé à la qualité de l'alimentation	39) Macronutrients, diet quality, and frailty in older men (Journal of Gerontology: Medical Sciences, 2014)	[...] Association of overall diet quality (as assessed with a standard index) with frailty status.
1) 4) 6) 8) 9) 13)	1) 4) 7) 10) 12) 13) 37)	9) 87) 126)	40) A comparison of four frailty models (The American Geriatrics Society, 2014)	Frailty is a condition that places older persons at risk of poor outcomes when exposed to stressful events.
1) 4) 6) 8) 9)	1) 12) 18)	33) 36)	40) A comparison of four frailty models (The American Geriatrics Society, 2014)	[...] Frailty is a predictor of functional deterioration and mortality.
9) 10)	19)	124)	40) A comparison of four frailty models (The American Geriatrics Society, 2014)	Frailty is not the same as disability.

Thomas WAUTERS - **DEFINITION DE LA FRAGILITE A PARTIR DES CRITERES RETENUS DANS LA LITTERATURE**

Th. : Méd. : Brest 2017

RESUME:

Introduction: La fragilité est un concept de gériatrie apparu récemment. De multiples études abordent ce sujet, mais il n'y a pas de consensus pour une définition de la fragilité. L'obtention d'une définition et d'outils de diagnostic de la fragilité deviennent de plus en plus nécessaires avec le vieillissement de la population. Cette étude a pour but à partir des définitions préexistantes et de leurs critères de produire une définition avec des critères qui permettent un consensus.

Méthodes : L'étude est qualitative, se base sur une revue systématique de la littérature par méthode PRISMA. De cette revue de littérature sont extraites les définitions de la fragilité. Il y a recours à l'utilisation de la théorie ancrée (grounded theory) pour réaliser un codage à partir des critères issus des définitions. Le codage est à trois niveaux (ouvert-axial-thématique). Les thèmes sont ensuite organisés en organigramme et chacun des grands axes est exploré par un sous organigramme. Enfin cela permet de dégager les critères dans une définition.

Résultats : Sur 40 articles issus de la revue de littérature, 348 définitions servent au codage. De ces définitions, 209 critères sont extraits comme code ouvert. Le codage axial donne 52 axes. Puis le codage thématique fait ressortir 14 thèmes. Ce codage met en évidence une confusion entre les causes, ce qui se passe avant la fragilité (la pré fragilité) et ce qui se passe après la fragilité, les conséquences. Il est aussi mis en évidence que certains critères font consensus dans la fragilité comme l'âge/vieillissement, les facteurs nutritionnels, l'addiction, l'environnement.

Conclusion: La fragilité est décrite par de nombreuses définitions, pour le moment aucune ne fait consensus. Pourtant les 2 principales théories reconnues (théorie de Fried et al. Et théorie de Rockwood et al) ne sont pas antinomiques. Les critères identifiés peuvent offrir un socle commun pour la réalisation d'une définition consensuelle.

MOTS CLES:
FRAGILITE
PATIENT FRAGILE
CRITERE
CODAGE
DEFINITION

JURY :

Président : Professeur Jean-Yves LE RESTE

Membres du Jury : Professeur Jean-Yves LE RESTE

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