KRHKOST- Fizioterapevtska intervencija

Izsledki raziskav vpliva telesne dejavnosti na krhkost in priporočila programov kinezioterapije v domačem in bolnišničnem okolju

Tjaša Knific, dipl. fiziot., nacionalni promotor zdravja NIJZ

Svetovno prebivalstvo se stara…

Prebivalstvo se danes stara hitreje kot nekoč.

Med leti 2015 in 2050 se bo na globalni ravni število starejših podvojilo (iz 12 na 22%).

Leta 2020 smo dosegli mejnik, ko je delež oseb, starejših od 60 let večji od deleža otrok, mlajših od 5 let.

Do leta 2050 bo več kot 80 % starejših oseb živelo v državah z nizkim ali srednjim dohodkom.

Vse države sveta se soočajo z izzivi prilagajanja zdravstvenih in socialnih sistemov, ki bi ublažili napovedujoče demografske spremembe.

Vir: https://www.who.int/health-topics/ageing#tab=tab_1 <20.10.2021>

Figure 1

Celostna geriatrična ocena (CGA/GEM)

Recognition of Frailty in an individual

Either by encounter screening or by frailty presentation (or by systematic screening - not yet recommended

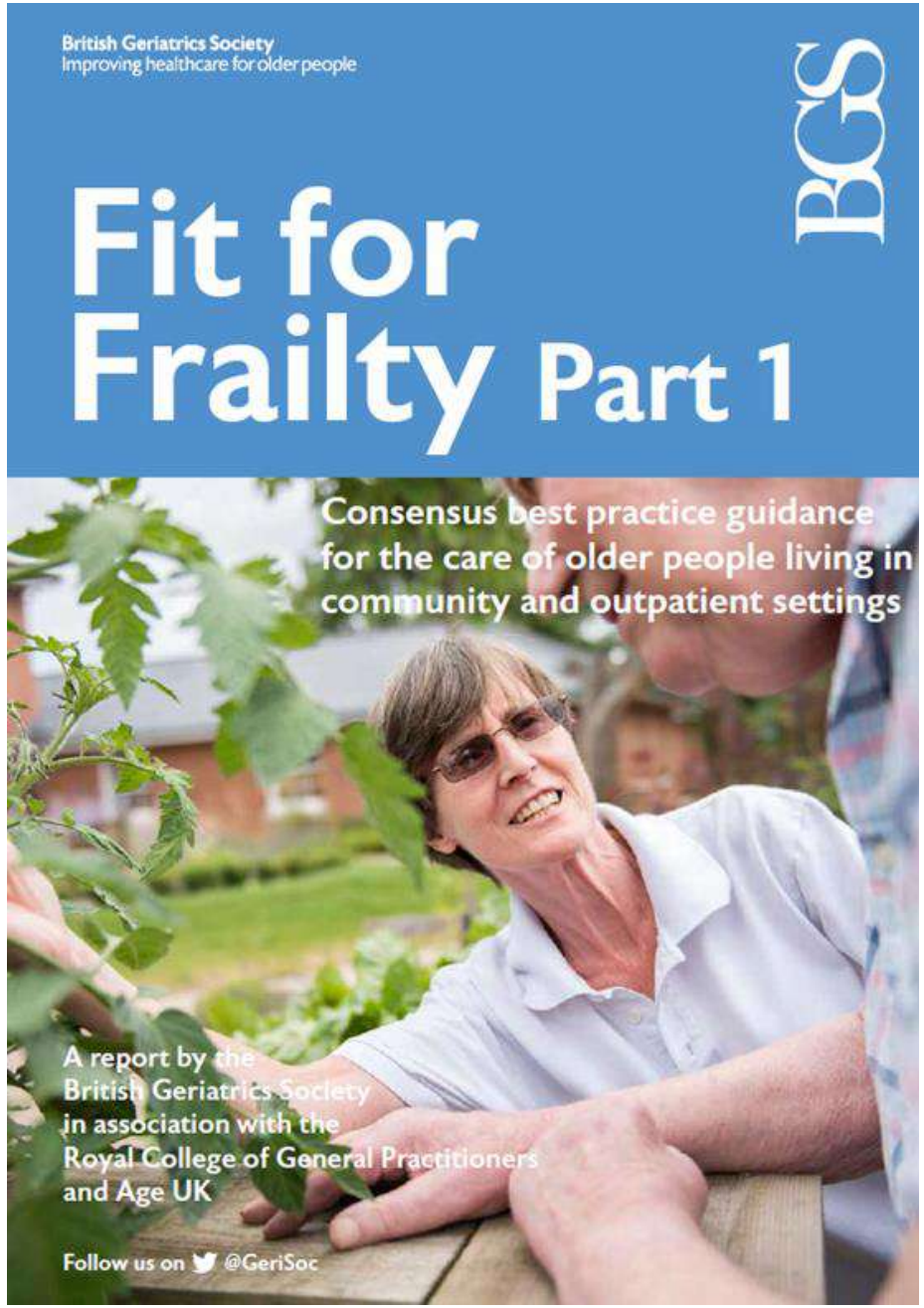
Holistic Medical Review including

- Identification and Optimisation of medical illnesses plus onward referral to other specialists
- Individualised goal setting
- Drug review
- Anticipatory care planning (which may include escalation plans, emergency plans, end of life care (EOLC) plans

Geriatrician | Therapist or other community care team member | Specialist nurse | OPMHT

Individualised Care and Support Plan

With details of personal goals, optimisation plans, escalation and emergency plans as well as advance care plans for some

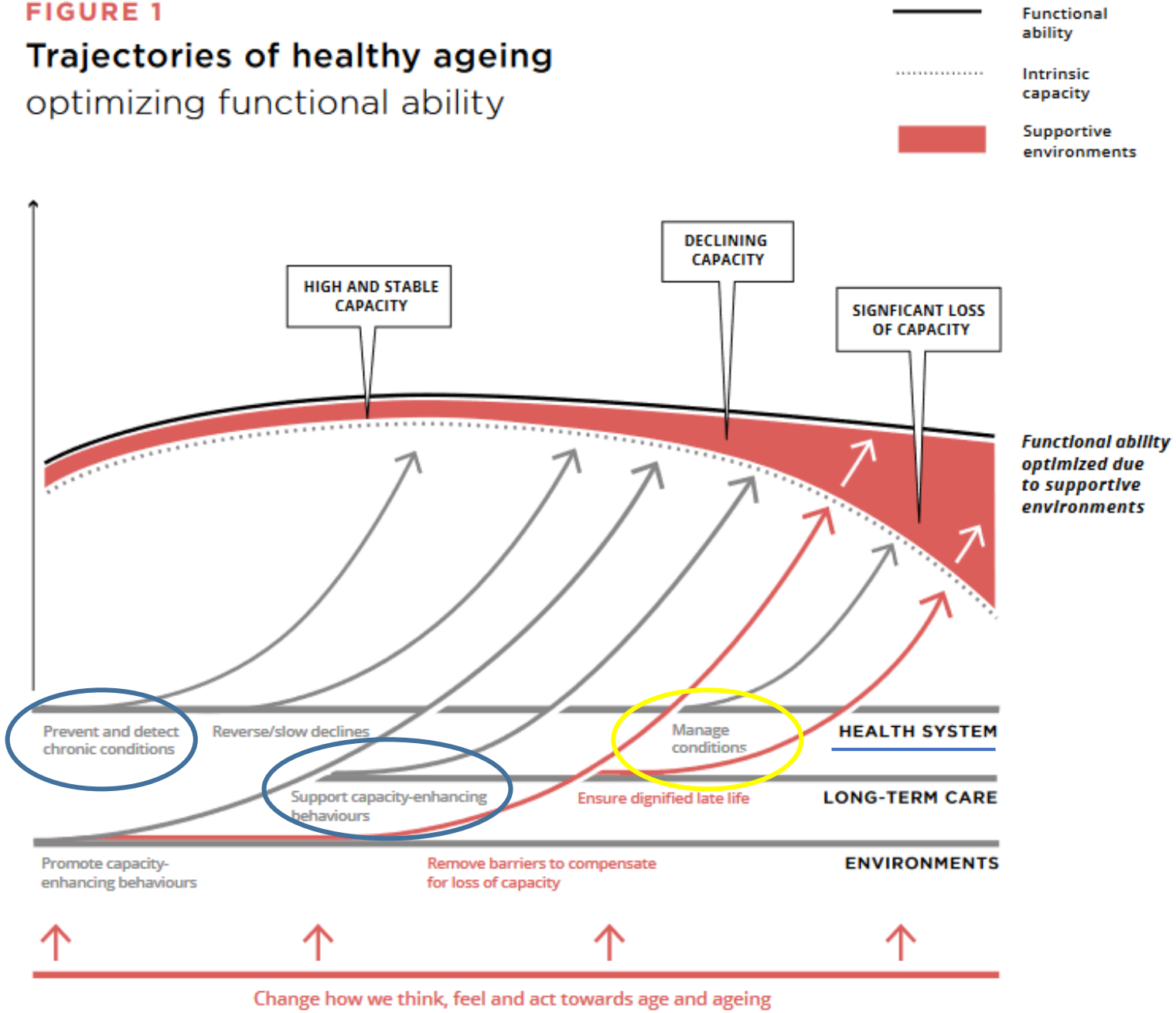


Vir: Smernice za obravnavo starejših oseb, živečih doma ali v lokalni skupnosti Britanskega združenja za geriatrijo, 2017

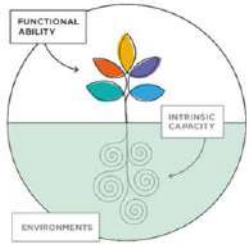
FIGURE 1

Trajectories of healthy ageing

optimizing functional ability



Healthy ageing is "the process of developing and maintaining the functional ability that enables well-being in older age".

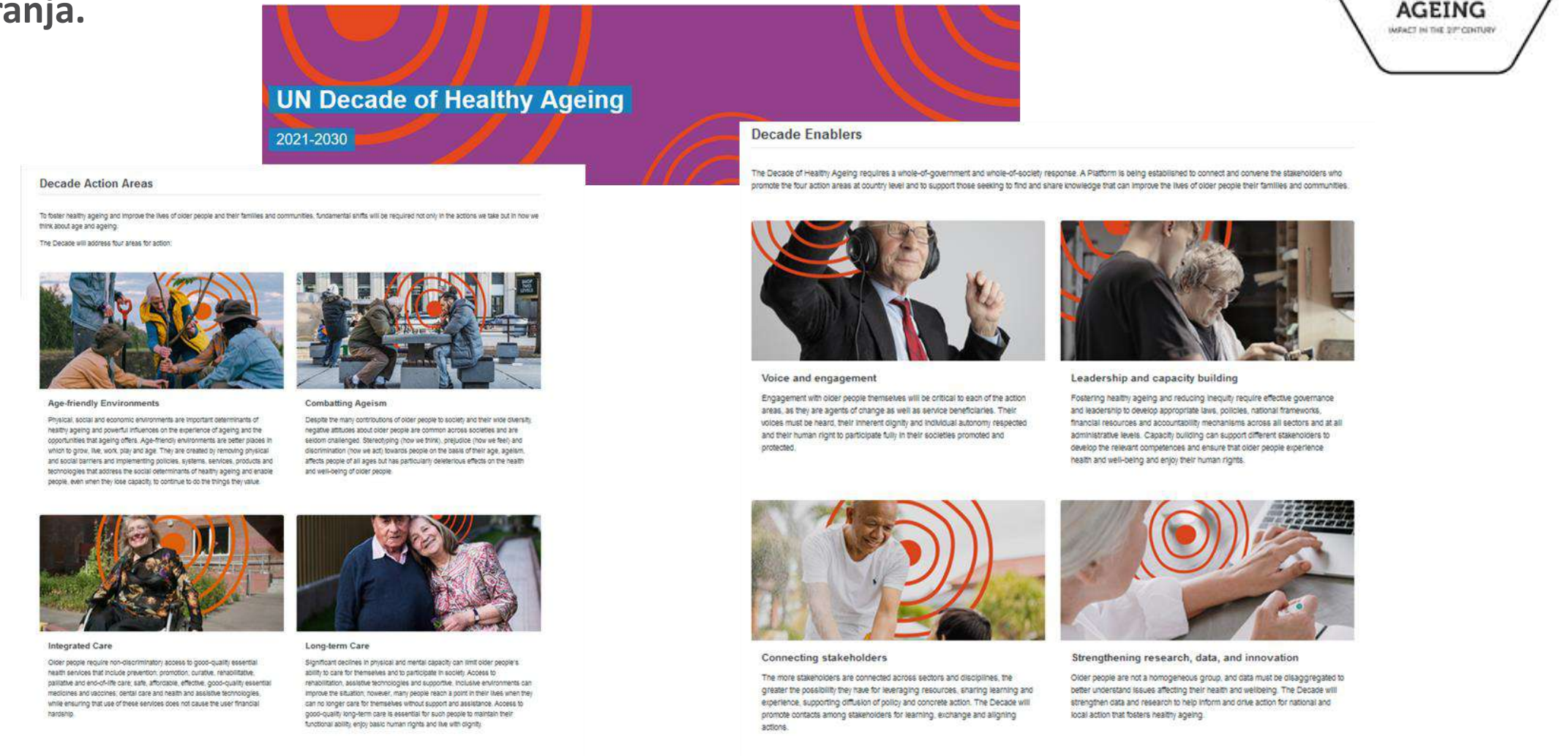


Vir: DECADE OF HEALTHY AGEING BASELINE REPORT SUMMARY

World Health Organization

DEKADA STARANJA 2021-2030

- **Svetovna zdravstvena organizacija je razglasila dekado staranja 2021-2030 ter pripravila portal, kjer so objavljene aktualnosti na področju aktivnega in zdravega staranja.**



Vir: https://www.who.int/initiatives/decade-of-healthy-ageing

World Health Organization
REGIONAL OFFICE FOR Europe

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Healthy ageing

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- Data and statistics
- Views on ageing
- Publications
- Partners
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Decade of Healthy Ageing 2021 – 2030

19

05-01-2021

The United Nations has proclaimed 2021–2030 the Decade of Healthy Ageing, with WHO leading international action to improve the lives of older people, their families and communities.

The Decade brings together a variety of stakeholders galvanizing concerted action to:

- change how we think, feel and act towards age and ageing;
- develop communities in ways that foster the abilities of older people;
- deliver person-centred, integrated care and primary health services that are responsive to older people; and
- provide older people access to long-term care when they need it.

WHO/Malin Bring

Initiatives undertaken as part of the Decade will seek the participation of older people, who will be central to and fully engaged in this multistakeholder collaboration.

Vir: https://www.euro.who.int/en/health-topics/Life-stages/healthy-ageing

Opolnomočenje

SSKJ: opolnomôčenje *samostalnik srednjega spola*

- **1.** zagotovitev ustreznih pogojev za polno uporabo, razvoj sposobnosti koga, zlasti z izobraževanjem Vir: https://fran.si

European patient forum (EPF): Opolnomočenje je proces, ki osebi omogoča povečanje nadzora nad lastnim življenjem, hkrati ji omogoča vplivanje na proces in izide njegovega zdravljenja.

EPF European Patients Forum

KAJ JE OPOLNOMOČENJE BOLNIKA?

Patient Empowerment Campaign

Patients prescribe E5 for Sustainable Health Systems

BOLNIKI ZA VZDRŽNOST ZDRAVSTVENIH SISTEMOV PRIPOROČAJO E5

POSAMEZNIK

EDUCATION (IZOBRAŽEVANJE)

Bolniki lahko sprejemajo ozaveščene odločitve o svojem zdravju, če imajo na voljo vse potrebne informacije in če so jim le-te predstavljene na razumljiv način.

EXPERTISE (ZNANJE)

Bolniki dnevno nadzirajo svojo bolezen, zato imajo edinstveno izkušnjo z zdravstveno oskrbo, ki jo je potrebno upoštevati.

EQUALITY (ENAKOVREDNOST)

Bolniki potrebujejo podporo, da bodo v zdravljenju svoje bolezni enakovredni partnerji z zdravstvenimi strokovnjaki.

E5

ORGANIZACIJA

EXPERIENCE (IZKUŠNJE)

Bolniki se povezujejo v združenja, ki jih zastopajo in predstavljajo njihov skupen glas ter širijo njihove izkušnje.

POLITIKA

ENGAGEMENT (UDEJSTVOVANJE)

Bolnik naj bo vključen v oblikovanje učinkovitejše zdravstvene oskrbe za vse ter v raziskave za zagotavljanje novih in boljših načinov zdravljenja in oskrbe.

#PatientsprescribE

SLABA ZDRAVSTVENA PISMENOST PREDSTAVLJA:

3-5 %

VSEH STROŠKOV ZDRAVSTVENE OSKRBE NA SISTEMSKI RAVNI

"The costs of limited health literacy: a systematic review", Eichler K, Wieser S, Bruegger U, Int J Public Health, 2009;54(5):313-24

OPOLNOMOČENJE JE:

proces, ki osebam omogoča, da povečajo nadzor nad lastnim življenjem, in ki krepi njihovo zmožnost, da ukrepajo v zvezi z zadevami, ki so zanje pomembne.

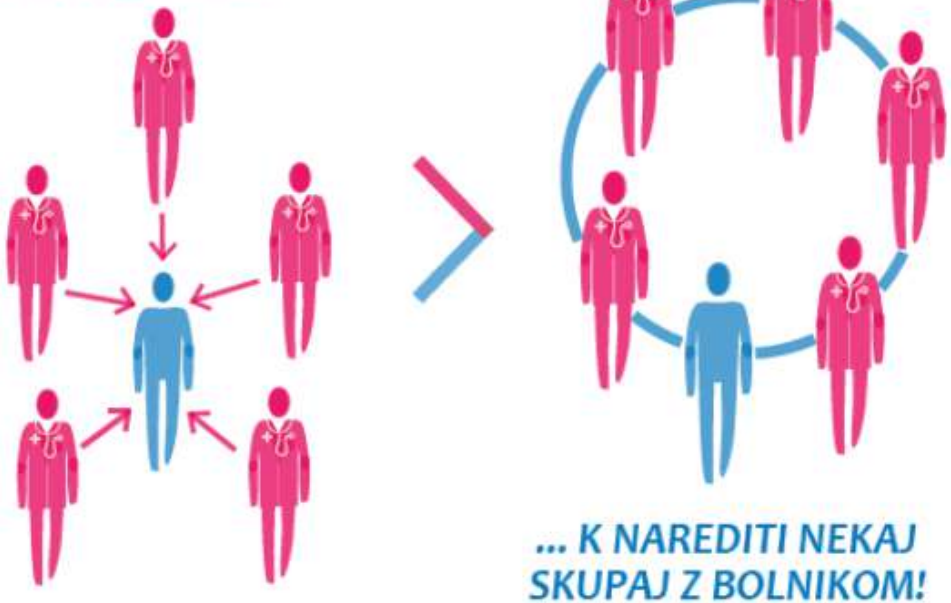
VIDIKI OPOLNOMOČENJA VKLJUČUJEJO:

- zaupanje v lastno učinkovitost
- zavedanje samega sebe
- medsebojno zaupanje
- veščine reševanja problemov
- zdravstveno pismenost

Vir. https://www.nijz.si/sl/opolnomocenje-bolnika-kot-pomemben-element-obvladovanja-kronicnih-bolezni

OPOLNOMOČENI BOLNIKI SO DEL ZDRAVSTVENEGA TIMA

NAREDITI NEKAJ ZA BOLNIKA ...



... K NAREDITI NEKAJ SKUPAJ Z BOLNIKOM!

OPOLNOMOČENI BOLNIKI SO KLJUČNEGA POMENA ZA ZDRAVSTVENE SISTEME

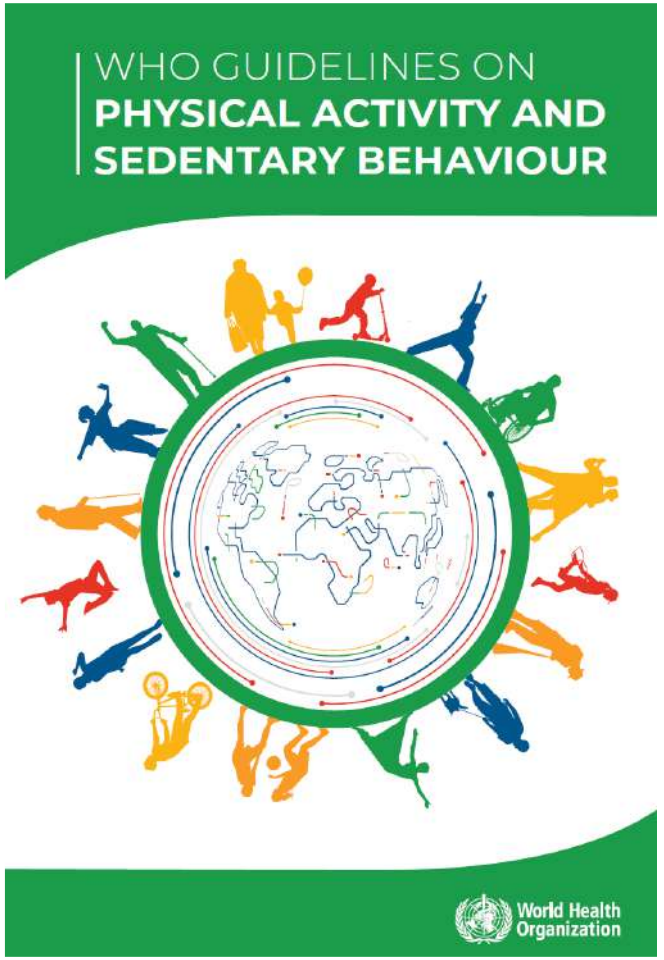
- MI sprejemamo informirane odločitve o našem zdravljenju in oskrbi
- MI imamo boljši odnos z zdravstvenimi delavci
- MI smo se zavezali, da bomo upoštevali navodila za naše zdravljenje
- MI smo pripravljeni in sposobni prevzeti večjo odgovornost za lastno oskrbo
- MI se udeležujemo preventivnih pregledov ter stremimo k zgodnjemu prepoznavanju bolezni, kar zmanjšuje potrebo po hospitalizacijah in urgentnih pregledih

... VSE NAŠTETO NA DOLGI ROK ZMANJŠUJE STROŠKE ZDRAVSTVENE OSKRBE.

SMERNICE SVETOVNE ZDRAVSTVENE ORGANIZACIJE O TELESNI DEJAVNOSTI IN SEDEČEM VEDENJU (2020)

ZA KOGA?

- **Otroke in mladostnike** (5 do 17 let)
- **Odrasle** (18 so 64 let)
- **Starejše odrasle** (65 let in več)
- **Nosečnice** in **ženske po porodu**
- **Odrasle** in **starejše odrasle** (18 let in več) **s kroničnimi stanji**
- **Otroke in mladostnike** (5 do 17 let) in **odrasle** (18 let in več) **živeče z oviranostmi**



Vir: WHO Guidelines on Physical Activity and Sedentary Behavior: at glance. Geneva: World Health Organization; 2020

KLJUČNA SPOROČILA SMERNIC SZO O TELESNI DEJAVNOSTI IN SEDEČEM VEDENJU

VSAK GIB ŠTEJE.

BODIMO AKTIVNI. *VSAKDO. VSEPOVSOD. VSAK DAN.*

1. **Telesna dejavnost je koristna za telesno in duševno zdravje.** Redna telesna dejavnost lahko prepreči in pomaga pri obvladovanju bolezni srca in žilja, sladkorne bolezni tipa 2 in raka, ki povzročajo skoraj tri četrtine smrti po svetu. Zmanjšuje simptome depresije in tesnobe ter izboljšuje miselne procese, učne sposobnosti in splošno počutje.

2. **Že nekaj telesne dejavnosti je bolje kot nič, vendar več gibanja prinaša več koristi za zdravje.** SZO za zdravje in dobro počutje vseh odraslih priporoča najmanj 150–300 minut zmerno intenzivne aerobne telesne dejavnosti tedensko (ali enakovredno količino visoko intenzivne telesne dejavnosti), za otroke in mladostnike pa povprečno 60 minut zmerne aerobne telesne dejavnosti dnevno.

3. **Vsakršna telesna dejavnost šteje.** Telesna dejavnost se lahko izvaja v okviru službenih, športnih in prostočasnih dejavnosti, kot aktiven transport (hoja, kolesarjenje, vožnja z invalidskim vozičkom) ali kot del vsakdanjih gospodinjskih opravil.

4. **Krepitev mišic koristi vsem.** Da bi preprečili padce in izboljšali zdravje bi morali odrasli, stari 65 in več let, izvajati telesno dejavnost s poudarkom na izboljšanju ravnotežja, koordinacije ter krepitve mišic.

5. **Preveč sedenja lahko škoduje zdravju.** Sedeče vedenje povečuje tveganje za nastanek bolezni srca in žilja, raka in sladkorne bolezni tipa 2. Omejevanje časa, ki ga preživimo sede, in izvajanje telesne dejavnosti pozitivno vplivata na naše zdravje.

6. **Več telesne dejavnosti in manj sedenja lahko koristita vsakomur.** To velja tudi za nosečnice, ženske po porodu, osebe, ki živijo s kroničnimi boleznimi, in osebe z zmanjšano zmožnostjo in/ali invalidnostjo[2].

Vir: Pustivšek S, Backović Juričan A, Knific T (2021). Smernice za telesno dejavnost in sedeče vedenje. Ljubljana; NIJZ (gradivo v izdajanju)

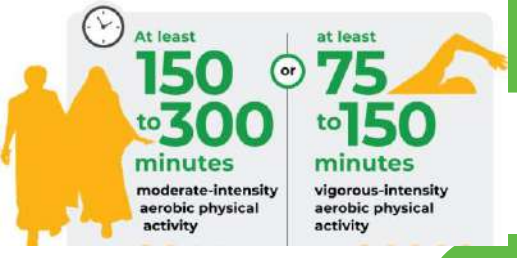
NIJZ Nacionalni inštitut za javno zdravje

SKUPAJ ZA ZDRAVJE

Smernice za telesno dejavnost starejših odraslih (stari 65 let in več)

Vsi starejši naj bodo redno telesno dejavni.

Znatne koristi za zdravje : vsaj **150-300 minut zmerno intenzivne** aerobne telesne dejavnosti ali vsaj **75-150 minut visoko intenzivne** aerobne telesne dejavnosti oz. kombinacijo obeh intenzivnost.



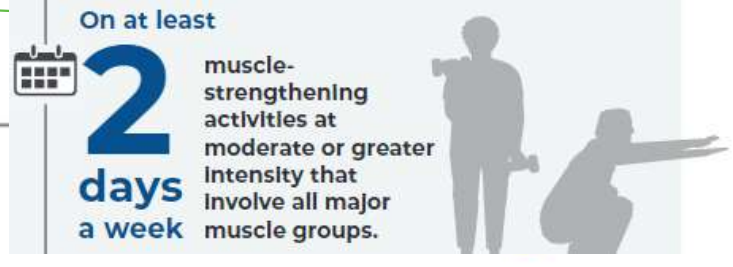
Za dodatne koristi za zdravje: več kot 300 minut zmerno intenzivne aerobne telesne dejavnosti ali **več kot 150 minut visoko intenzivne** aerobne telesne oz. kombinacijo obeh intenzivnost.

Za zmanjšanje škodljivih učinkov velike količine sedečega vedenja na zdravje, bi morali izvajati večje količine zmerno do visoko intenzivne telesne dejavnosti od priporočene.

Za izboljšanje funkcionalnih sposobnosti in preprečevanje padcev, vsaj 3 ali večkrat na teden izvajajo **raznoliko več komponentno telesno dejavnost** zmerne ali večje intenzivnosti.

Starejši odrasli naj **omejijo čas**, ki ga preživijo **sede**.

Vsaj **2 ali večkrat na teden** izvajajo **vaje za krepitev mišic** zmerne do večje intenzivnosti



Odrasli z zmanjšano zmožnostjo in/ali invalidnostjo (stari 18 let in več)

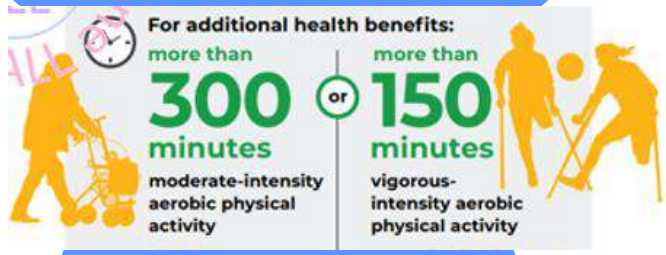
Vsi naj bodo redno telesno dejavni.

Znatne koristi za zdravje : vsaj **150-300 minut zmerno intenzivne** aerobne telesne dejavnosti ali vsaj **75-150 minut visoko intenzivne** aerobne telesne dejavnosti oz. kombinacijo obeh intenzivnost.

STAREJŠI ODRASLI: za izboljšanje funkcionalnih sposobnosti in preprečevanje padcev, vsaj 3 ali večkrat na teden izvajajo **raznoliko več komponentno telesno dejavnost** zmerne ali večje intenzivnosti.

Za zmanjšanje škodljivih učinkov velike količine sedečega vedenja na zdravje, bi morali izvajati večje količine zmerno do visoko intenzivne telesne dejavnosti od priporočene.

Za dodatne koristi za zdravje: več kot 300 minut zmerno intenzivne aerobne telesne dejavnosti ali **več kot 150 minut visoko intenzivne** aerobne telesne oz. kombinacijo obeh intenzivnost.



Vsaj **2 ali večkrat na teden** izvajajo **vaje za krepitev mišic** zmerne do večje intenzivnosti.

Omejijo naj čas, ki ga preživijo **sede**.

NIJZ Nacionalni inštitut za javno zdravje

SKUPAJ ZA ZDRAVJE

VSAK GIB ŠTEJE

BODIMO AKTIVNI. *VSAKDO. VSEPOVSOD. VSAK DAN.*

WHO guidelines on physical activity and sedentary behaviour (2020).

For more information, visit: **www.who.int/health-topics/physical-activity**

LET'S Be active Everyone Everywhere Everyday

World Health Organization

Frailty and Physical Fitness in Elderly People

Navarrete-Villanueva D, Gómez-Cabello A, Marín-Puyalto J,
Moreno LA, Vicente-Rodríguez G, Casajús JA (2021). Frailty and Physical Fitness in Elderly People: A Systematic Review and Meta-analysis. Sports Medicine 51:143–160 https://doi.org/10.1007/s40279-020-01361-1

Sports Medicine (2021) 51:143–160
https://doi.org/10.1007/s40279-020-01361-1

SYSTEMATIC REVIEW

Frailty and Physical Fitness in Elderly People: A Systematic Review and Meta-analysis

David Navarrete-Villanueva[1,2,3,4] · Alba Gómez-Cabello[1,2,3,5,6] · Jorge Marín-Puyalto[1,2,3,7] · Luis Alberto Moreno[1,2,3,4,6] · Germán Vicente-Rodríguez[1,2,3,6,7] · José Antonio Casajús[1,2,3,4,6]

Published online: 17 November 2020

Abstract

Background Frailty is an age-related condition that implies a vulnerability status affecting quality of life and independence of the elderly. Physical fitness is closely related to frailty, as some of its components are used for the detection of this condition.

Objectives This systematic review and meta-analysis was conducted to investigate the magnitude of the associations between frailty and different physical fitness components and to analyse if several health-related factors can act as mediators in the relationship between physical fitness and frailty.

Methods A systematic search was conducted of PubMed, SPORTDiscus, and Web of Science, covering the period from the respective start date of each database to March 2020, published in English, Spanish or Portuguese. Two investigators evaluated 1649 studies against the inclusion criteria (cohort and cross-sectional studies in humans aged ≥ 60 years that measured physical fitness with validated tests and frailty according to the Fried Frailty Phenotype or the Rockwood Frailty Index). The quality assessment tool for observational cross-sectional studies was used to assess the quality of the studies.

Results Twenty studies including 13,527 participants met the inclusion criteria. A significant relationship was found between frailty and each physical fitness component. Usual walking speed was the physical fitness variable most strongly associated with frailty status, followed by aerobic capacity, maximum walking speed, lower body strength and grip strength. Potential mediators such as age, sex, body mass index or institutionalization status did not account for the heterogeneity between studies following a meta-regression.

Conclusions Taken together, these findings suggest a clear association between physical fitness components and frailty syndrome in elderly people, with usual walking speed being the most strongly associated fitness test. These results may help to design useful strategies, to attenuate or prevent frailty in elders.

Systematic Review Registration PROSPERO registration no. CRD42020149604 (date of registration: 03/12/2019)

Key Points

Physical fitness components are strongly associated with frailty.

Usual walking speed is the physical fitness test most strongly associated with frailty status.

Electronic supplementary material The online version of this article (https://doi.org/10.1007/s40279-020-01361-1) contains supplementary material, which is available to authorized users.

✉ José Antonio Casajús
joscant@unizar.es

Extended author information available on the last page of the article

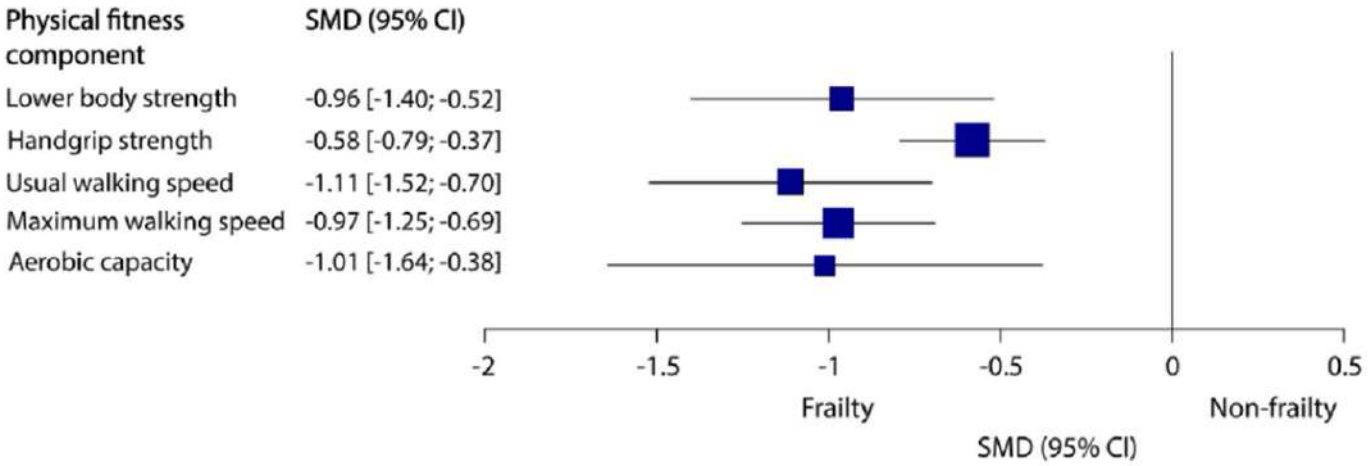


Fig. 7 Global meta-analysis of physical fitness components and frailty status

Mišična moč, ravnotežje, hitrost hoje in aerobna zmogljivost so močno povezani s krhkostjo.

Priporočila in usmeritve

- Na krhkost najbolj občutljiva spremenljivka je hitrost sproščene hoje, sledijo ji aerobna zmogljivost, hitrost hitre hoje, mišična moč spodnjega dela telesa in zmogljivost prijema.

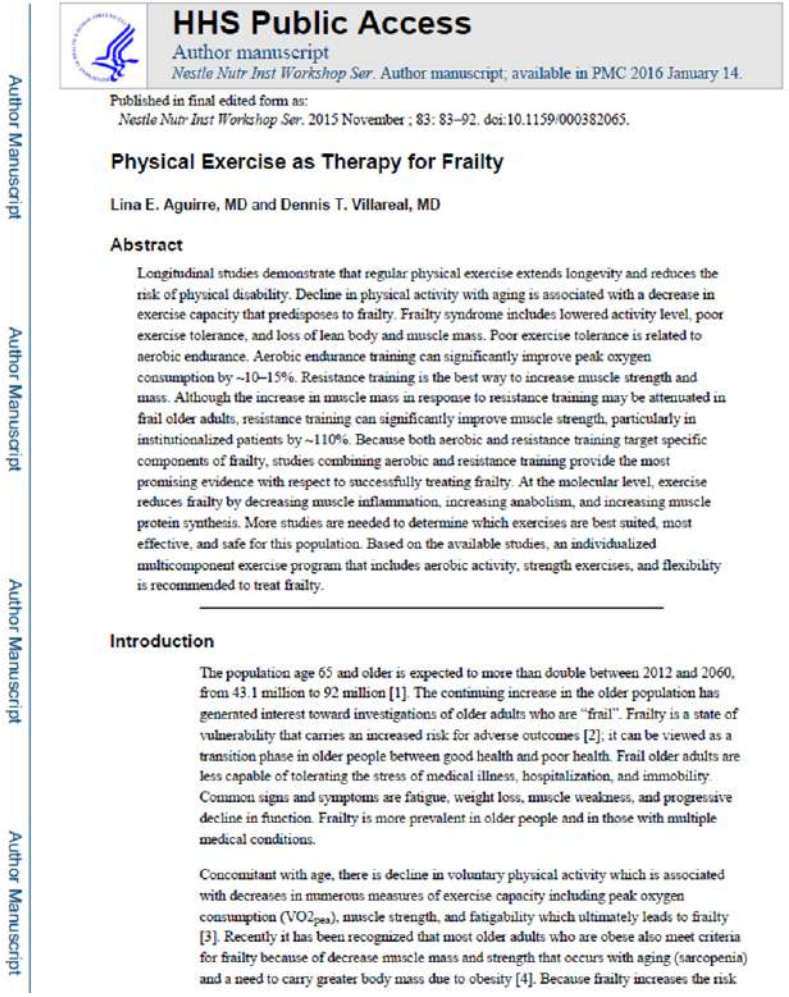
- Najboljša biomarkerja za napovednost krhkosti sta zmogljivost prijema in zmanjšana mišična moč, kasneje tudi slabše statično in dinamično ravnotežje.

- Meja maksimalne aerobne zmogljivosti za neodvisno življenje (VO_2max)- 18 mL/kg/min, meja maksimalne aerobne zmogljivosti za funkcionalno nezmožnost (VO_2max)- 15 mL/kg/min (Pulz et al., 2008)

Pulz C, Diniz RV, Alves ANF, Tebexreni AS, Carvalho AC, de Paola AAV, et al. Incremental shuttle and six-minute walking tests in the assessment of functional capacity in chronic heart failure. Can J Cardiol. 2008;24:131–5

Physical Exercise as Therapy for Frailty

Aguirre LE, Villareal DT (2015). Physical Exercise as Therapy for Frailty. Nestle Nutr Inst Workshop 11; 83: 83–92. doi:10.1159/000382065



Published in final edited form as:
Nestle Nutr Inst Workshop Ser. 2015 November ; 83: 83–92. doi:10.1159/000382065.

Physical Exercise as Therapy for Frailty

Lina E. Aguirre, MD and Dennis T. Villareal, MD

Abstract

Longitudinal studies demonstrate that regular physical exercise extends longevity and reduces the risk of physical disability. Decline in physical activity with aging is associated with a decrease in exercise capacity that predisposes to frailty. Frailty syndrome includes lowered activity level, poor exercise tolerance, and loss of lean body and muscle mass. Poor exercise tolerance is related to aerobic endurance. Aerobic endurance training can significantly improve peak oxygen consumption by ~10–15%. Resistance training is the best way to increase muscle strength and mass. Although the increase in muscle mass in response to resistance training may be attenuated in frail older adults, resistance training can significantly improve muscle strength, particularly in institutionalized patients by ~110%. Because both aerobic and resistance training target specific components of frailty, studies combining aerobic and resistance training provide the most promising evidence with respect to successfully treating frailty. At the molecular level, exercise reduces frailty by decreasing muscle inflammation, increasing anabolism, and increasing muscle protein synthesis. More studies are needed to determine which exercises are best suited, most effective, and safe for this population. Based on the available studies, an individualized multicomponent exercise program that includes aerobic activity, strength exercises, and flexibility is recommended to treat frailty.

Introduction

The population age 65 and older is expected to more than double between 2012 and 2060, from 43.1 million to 92 million [1]. The continuing increase in the older population has generated interest toward investigations of older adults who are "frail". Frailty is a state of vulnerability that carries an increased risk for adverse outcomes [2]; it can be viewed as a transition phase in older people between good health and poor health. Frail older adults are less capable of tolerating the stress of medical illness, hospitalization, and immobility. Common signs and symptoms are fatigue, weight loss, muscle weakness, and progressive decline in function. Frailty is more prevalent in older people and in those with multiple medical conditions.

Concomitant with age, there is decline in voluntary physical activity which is associated with decreases in numerous measures of exercise capacity including peak oxygen consumption ($VO2_{pea}$), muscle strength, and fatigability which ultimately leads to frailty [3]. Recently it has been recognized that most older adults who are obese also meet criteria for frailty because of decrease muscle mass and strength that occurs with aging (sarcopenia) and a need to carry greater body mass due to obesity [4]. Because frailty increases the risk

Vadba proti uporu lahko znatno izboljša mišično moč, zlasti pri hospitaliziranih krhkih bolnikih za ~110%.

Pri zdravih starejših odraslih je štirimesečna progresivna vadba proti uporu povečala mišično maso za 16-23 %, medtem ko se je mišična masa povečala za 2–9 % pri krhkih starejših odraslih.

Pri krhkih starejših odraslih, ki živijo v domu za ostarele in v skupnosti, se je izkazalo, da deset tednov treninga proti uporu znatno izboljša hitrost hoje.

Priporočila in usmeritve :

- vadba je bolj učinkovita pri krkih institucionaliziranih starejših, kot pri krhkih starejših, ki živijo v skupnosti.
- vadba je bolj učinkovita v zgodnejši fazi krhkosti.
- za preprečevanje krhkosti je najbolj učinkovita vadba, ki združuje aerobno vadbo in vadbo proti uporu.
- večkomponentna vadba je učinkoviteje vplivala na funkcionalno sposobnost krhkih starejših.
- trajanje vadbene enote naj bi bilo od 30–45 minut.
- spremembe v življenjskih navadah krhkih starejših, ki vodijo do trajnih sprememb lahko predstavljajo poseben izziv.

What are the most effective interventions to improve physical performance in pre-frail and frail adults ?

Kidd et al. (2019). What are the most effective interventions to improve physical performance in pre-frail and frail adults? A systematic review of randomized control trials.
BMC Geriatrics 19:184 https://doi.org/10.1186/s12877-019-1196-x

Kidd et al. BMC Geriatrics (2019) 19:184
https://doi.org/10.1186/s12877-019-1196-x

BMC Geriatrics

RESEARCH ARTICLE Open Access

What are the most effective interventions to improve physical performance in pre-frail and frail adults? A systematic review of randomised control trials

Tara Kidd[1], Freda Mold[2], Claire Jones[2], Emma Ream[2], Wendy Grosvenor[2], Märtha Sund-Levander[3], Pia Tingström[3] and Nicola Carey[2*]

Abstract

Background: With life expectancy continuing to rise in the United Kingdom there is an increasing public health focus on the maintenance of physical independence among all older adults. Identifying interventions that improve physical outcomes in pre-frail and frail older adults is imperative.

Methods: A systematic review of the literature 2000 to 2017 following PRISMA guidelines and registered with PROSPERO (no. CRD42016045325).

Results: Ten RCT trials fulfilled selection criteria and quality appraisal. The study quality was moderate to good. Interventions included physical activity; nutrition, physical activity combined with nutrition. Interventions that incorporated one or more physical activity components significantly improved physical outcomes in pre-frail and/or frail older adults.

Conclusions: Physical activity interventions are key to maintaining independence in pre-frail and frail older adults. A lack of consensus regarding the definition of frailty, and an absence of core measures to assess this means any attempt to create an optimal intervention will be impeded. This absence may ultimately impact on the ability of older and frail adults to live well and for longer in the community.

Keywords: Frailty, Successful aging, Physical activity, Nutrition, Intervention

Background

Frailty, a geriatric syndrome characterized by unintentional weight loss, low muscle strength, feeling of exhaustion, reduced physical activity capacity and slow walking speed [22, 34, 46], affects 4–60% adults aged ≥65 years [11] and is associated with significantly increased risk of poor physical health, hospitalization, nursing home care and mortality [18, 29, 41]. In an aging society the rapidly increasing number of frail older adults and associated rise in healthcare expenditure [19] is seen as a major challenge facing health and social care [1].

Despite growing interest in this topic a widely accepted definition and clear criteria for frailty is lacking [7]. Currently, the Cardiovascular Health Study (CHS) frailty phenotype, also known as the Fried Criteria [22], which focuses on physical phenotype, is the most widely used tool for assessing frailty status [21].

There is a growing consensus that interventions targeting the physical phenotype associated with increased risk for adverse outcomes in older adults; particularly mobility, strength, balance, nutrition and physical activity, may offer the best opportunity to prevent, delay, or reverse existing symptoms of physical frailty [3, 9]. Evidence from two recent systematic reviews identified a range of interventions, i.e. physical activity, nutrition, geriatric assessment or a blend of these delivered in primary care, community settings or at home, and found

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- Multikomponentne intervenicije niso bile učinkovitejše od eno komponentnih intervencij.

- Primarna raven ZV

Skupinska vadba, ciljana na izboljšanje ravnotežja, moč rok in nog, funkcijska vadba ki posnema dnevne aktivnosti; 2× T 45 min; 12 tednov; vzdrževanje stanja 36 tednov po končani aktivnosti.

- Sekundarna raven ZV

Vadbene intervencije po OP posegih, ciljana na izboljšanje splošne mobilnosti.

- Multikomponentna intervencija

10 FT obiskov v 12 mesecih; cilj je izboljšanje ravnotežja in mišične moči; dodajanje proteinskih dodatkov pri osebah z ITM < 18.5.

Intervencije vodene s strani oskrbovalcev: priročnik z opisanim vadbenim programom, dnevnik vadbe, slaba vadbena adhereneca 44% !!!

Priporočila in usmeritve

- Učinkovite so le specifične, ciljane intervencije , usmerjene v izboljšanje telesnega fitnesa (npr. izboljšanje vzdržljivosti v moči pri vadbi proti uporu).

- Intrevencije, ki so združevale vadbo proti uporu in vadbo za izboljšanje ravnotežja so bile najbolj uspešne pri zmanjševanju krhkosti in števila padcev.

- Nadzorovane intervencije na primarnem in sekundarnem nivoju so bile učinkovitejše od nenadzorovanih.

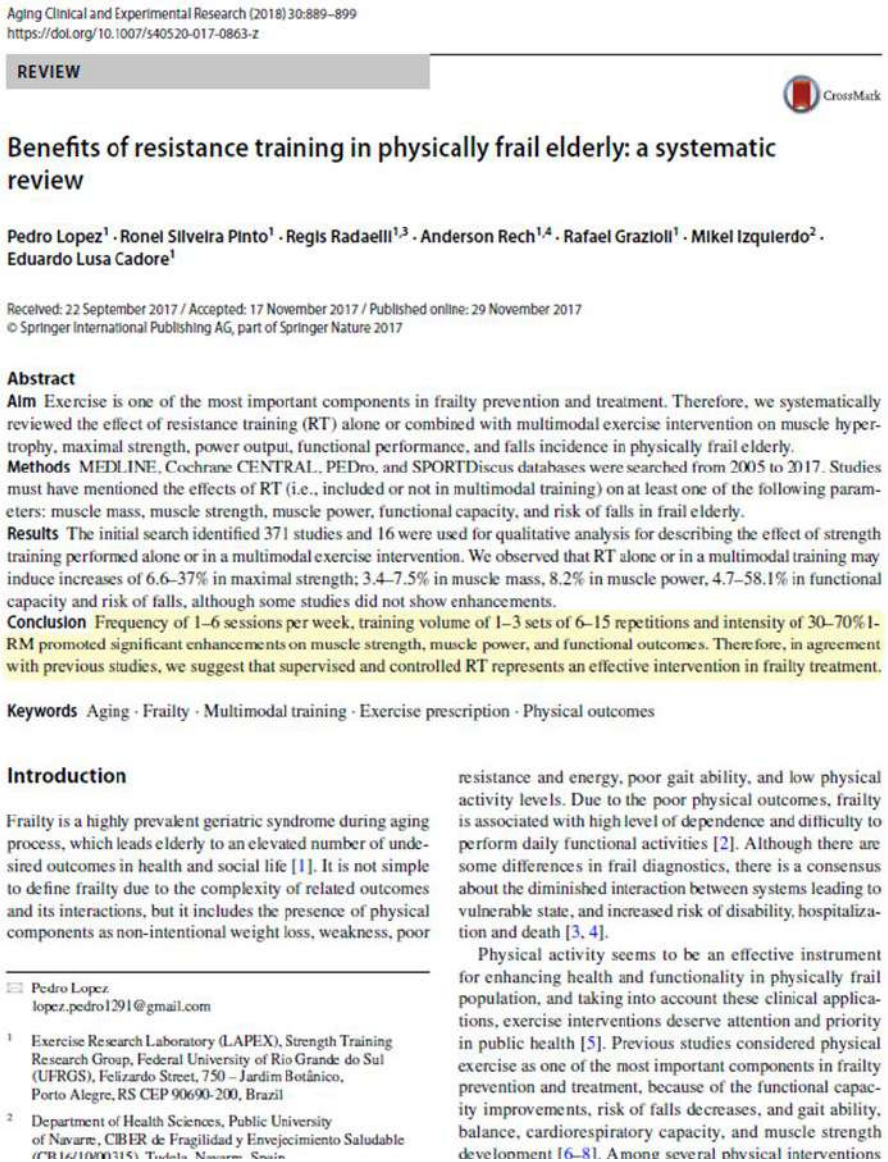
- Nadzorovane intervencije so izboljšale adherenco za vadbo, ki je ključna za dolgotrajni uspeh.

- Velik potencial v na daljavo nadzorovani vadbi na domu (asistenca preko telefona, mobilne aplikacije): stroškovno učinkovite intervencije, primerne za krhke starejše z ovirami pri transport (čas, oddaljenost).

- Zaznam problem: Podhranjenost večine krhkih starejših. Nujna je uvedba presejanja na podhranjenost v klinikah pri sprejemu in odpustu.

Benefits of resistance training in physically frail elderly

Lopez P et al (2017). Benefits of resistance training in physically frail elderly: a systematic review. Aging Clinical and Experimental Research 30:889–899. https://doi.org/10.1007/s40520-017-0863-z



Aging Clinical and Experimental Research (2018) 30:889–899
https://doi.org/10.1007/s40520-017-0863-z

REVIEW

Benefits of resistance training in physically frail elderly: a systematic review

Pedro Lopez[1] · Ronei Silveira Pinto[1] · Regis Radaelli[1,3] · Anderson Rech[1,4] · Rafael Grazioli[1] · Mikel Izquierdo[2] · Eduardo Lusa Cadore[1]

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Abstract

Aim Exercise is one of the most important components in frailty prevention and treatment. Therefore, we systematically reviewed the effect of resistance training (RT) alone or combined with multimodal exercise intervention on muscle hypertrophy, maximal strength, power output, functional performance, and falls incidence in physically frail elderly.

Methods MEDLINE, Cochrane CENTRAL, PEDro, and SPORTDiscus databases were searched from 2005 to 2017. Studies must have mentioned the effects of RT (i.e., included or not in multimodal training) on at least one of the following parameters: muscle mass, muscle strength, muscle power, functional capacity, and risk of falls in frail elderly.

Results The initial search identified 371 studies and 16 were used for qualitative analysis for describing the effect of strength training performed alone or in a multimodal exercise intervention. We observed that RT alone or in a multimodal training may induce increases of 6.6–37% in maximal strength; 3.4–7.5% in muscle mass, 8.2% in muscle power, 4.7–58.1% in functional capacity and risk of falls, although some studies did not show enhancements.

Conclusion Frequency of 1–6 sessions per week, training volume of 1–3 sets of 6–15 repetitions and intensity of 30–70%1-RM promoted significant enhancements on muscle strength, muscle power, and functional outcomes. Therefore, in agreement with previous studies, we suggest that supervised and controlled RT represents an effective intervention in frailty treatment.

Keywords Aging · Frailty · Multimodal training · Exercise prescription · Physical outcomes

Introduction

Frailty is a highly prevalent geriatric syndrome during aging process, which leads elderly to an elevated number of undesired outcomes in health and social life [1]. It is not simple to define frailty due to the complexity of related outcomes and its interactions, but it includes the presence of physical components as non-intentional weight loss, weakness, poor resistance and energy, poor gait ability, and low physical activity levels. Due to the poor physical outcomes, frailty is associated with high level of dependence and difficulty to perform daily functional activities [2]. Although there are some differences in frail diagnostics, there is a consensus about the diminished interaction between systems leading to vulnerable state, and increased risk of disability, hospitalization and death [3, 4].

Physical activity seems to be an effective instrument for enhancing health and functionality in physically frail population, and taking into account these clinical applications, exercise interventions deserve attention and priority in public health [5]. Previous studies considered physical exercise as one of the most important components in frailty prevention and treatment, because of the functional capacity improvements, risk of falls decreases, and gait ability, balance, cardiorespiratory capacity, and muscle strength development [6–8]. Among several physical interventions

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Vadba proti uporu spodbuja mišično hipertrofijo pri šibkih starejših. Ne izboljša le velikosti mišic, temveč tudi strukturo.

Šibki starejši lahko ohranjajo svojo mišično plastičnost in so sposobni povečati velikost mišic.

FITT princip za vadbo mišične moči:
Frekvenca: 1-6 × tedensko
Intezivnost: 30–70 % 1-RM
Trajanje: 6–15 ponovitev
Tip vadbe: vadba usmerjena v izboljšanje mišične moči in funkcionalnih gibalnih vzorcev

Delaying and reversing frailty

Nunan D (2019). Delaying and reversing frailty: a systematic review of primary care interventions.
Br J Gen Pract 69(678):e61–e69. doi: 10.3399/ bjgp18X700241

EBM Verdict: Primary care

Therapeutics

Muscle strength training for reversing frailty: how strong is the evidence?

10.1136/bmjebm-2019-111181

Check for updates

David Nunan

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A recent systematic review assessing interventions to delay or reverse frailty found a combination of muscle strength training, and protein supplementation was the most effective intervention and the easiest to implement in primary care. The quality of data, however, leaves some uncertainties about the evidence.

Though definitions differ, frailty is seen as a distinct, yet multidimensional, health state where a minor event can trigger major changes in health from which the individual may fail to return to their previous level of health. Frailty is underpinned by ageing-related degeneration across multiple physiological systems.[1,2] Estimates of its prevalence in community-dwelling older adults range from 5% to 17%.[3]

The importance of frailty as a risk factor is its association with other adverse health outcomes including falls and mobility decline resulting in dependency, need for long-term care and mortality.[4] A need for care and support arises when someone is no longer able to manage vital activities of daily living such as washing, dressing and feeding themselves. For illustration, the ability to get to the toilet in time is a threshold marking the difference between having carers visit twice a day and requiring live-in or residential care. The cost of care increases fivefold as this threshold is crossed.[5]

Given the above, the management of frailty is a priority, particularly for primary care providers.[6,7] Travers and colleagues set out to systematically review the evidence for the effectiveness of different interventions for preventing and managing frailty in primary care settings.[8]

EBM Verdict

EBM Verdict on: Delaying and reversing frailty: a systematic review of primary care interventions. *Br J Gen Pract* 2019;69(678):e61–e69. doi: 10.3399/ bjgp18X700241

- Strong evidence supports a beneficial effect of balance and functional task training with or without resistance (strength) training for reducing falls but not other important outcomes due to frailty in community-dwelling older adults both at lower and high risk. The evidence for primarily strength training is less clear due mainly to a lack of high-quality clinical trials.

What did they find?

A total of 46 studies involving 15 690 participants (median study size 160 participants) met the inclusion criteria. Of the frailty interventions, 23 involved physical activity, and other interventions involved health education, nutrition supplementation, home visits, hormone supplementation and counselling. Due to the heterogeneity of interventions, the authors were not able to perform a meta-analysis. The authors report a 'significant improvement' of frailty status in 10 (71%) out of 14 studies reporting this outcome. They report similar findings for frailty indicators in 69% (n=22) of studies where measured. The authors report that interventions with both muscle strength training and protein supplementation were consistently placed highest for effectiveness and ease of implementation (date not given).

There are limitations to consider. No data for effect sizes or CIs around them are presented, something recognised by the authors. There is no mention of adverse events nor their inclusion as a specific outcome, and we are therefore unsure about the harms of interventions, including strength training and nutrition supplementation. The review does not inform us which studies underpin their recommendations for implementing exercise and nutrition interventions nor the quality of their data. Finally, the authors perform crude indirect comparisons that do not take into consideration the inherent methodological issues in doing so (eg, confounding).

Existing guidelines recommend strength and balance training as part of a multifactorial intervention but not low-intensity exercise, brisk walking or untargeted group exercise for preventing falls in high-risk individuals (physically frail), including National Institute for Health and Clinical Excellence guidelines.[9] Other guideline organisations recommend a community-based exercise programme including balance, strength, flexibility and endurance training.[10]

There is at least one Cochrane review that assessed the effectiveness of exercise interventions for the prevention of falls in

Trdni dokazi potrjujejo ugoden učinek vadbe za izboljšanje ravnotežja in funkcijskega gibanja z ali brez vadbe proti uporu na zmanjšanje padcev, ne pa tudi na druge dejavnike krhkosti.

Priporočila in usmeritve

Obstoječe smernice priporočajo vadbo za izboljšanje moči in ravnotežja kot del multikomponentne vadbe.

Kot neučinkovita vadba pri visoko krhkih starejših se je izkazala nizkointenzivna vadba (hoja) ali neciljane skupinske vadbe.

Delaying and reversing frailty

Travers J, Romero Ortuno R, Jade Bailey J, Cooney MT (2019). Delaying and reversing frailty: a systematic review of primary care interventions. Br J Gen Pract; 1;69(678):e61-e69.

Research

John Travers, Roman Romero-Ortuno, Jade Bailey and Marie-Therese Cooney

Delaying and reversing frailty:

a systematic review of primary care interventions

Abstract

Background

Aim

Design and setting

Method

Results

Conclusion

Keywords

INTRODUCTION

Frailty has long been in the lexicon of everyday language. 'How easily the wind overturns a frail tree', Buddha reflected some 2500 years ago.[1] From such historic prevalence has come an inherited instinct for recognising frailty. However, it is only in recent years that frailty has come into focus for more rigorous medical definition in a shift of emphasis from single-system conditions to unifying constructs for holistic patient care.

Frailty can be described as a state of physiological vulnerability with diminished capacity to manage external stressors.[2,3] It increases the risks of illness, falls, dependency, disability, and death.[3,5]

Frailty is becoming a more common challenge as populations age and life expectancy lengthens. The prevalence of frailty is estimated at 10.7% in adults aged ≥65 years and increases to some 50% in those >80 years of age.[6] The United Nations estimates that the world population of individuals aged >60 years will more than double from 962 million in 2017 to 2.1 billion in 2050, whereas the population of individuals aged >80 years will triple from 137 million to 425 million in the same period.[6] In the UK, the number of individuals aged >65 years is estimated to grow from 10.4 million to 12.4 million by 2025 and life expectancy at 65 years is set to increase by 1.7 years.[6]

Frailty has been described as the most problematic expression of population ageing in the context of this considerable growth.[7] It has forced fundamental changes in national health policies. For example, since 2017 the new General Medical Services (GMS) contract in England mandates that all primary care practices use an appropriate tool to identify patients aged ≥65 years who are living with moderate or severe frailty. For patients living with severe frailty, the practice must undertake a clinical review; provide an annual medication review; discuss whether the patient has fallen in the last 12 months, activate an enriched Summary Care Record at the patient's request (if not already in place), and provide any other clinically relevant interventions.[7]

A variety of tools has been proposed for frailty screening in primary care.[8,9] A commonly used method is Fried's frailty phenotype[10] (three or more criteria from: exhaustion, unexplained weight loss, slowness, weakness, and low physical activity, with one or two criteria present defining pre-frailty). The cumulative deficit model proposed by Rockwood and Mitnitski[11] provides a frailty index based on the presence of deficits as a proportion of total measured. There are several other indices, checklists, and indicators.[12–14] A general model of frailty that captures commonly involved domains is shown in Figure 1.

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Submitted: 30 May 2018; Editor's response: 29 June 2018; final acceptance: 18 July 2018.

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Presejanje na krhkost se vedno bolj priporoča, jasnih smernic za zagotavljanje učinkovitih intervencij pri ugotovljeni krhkosti trenutno ni.

Key interventions	Physical exercise	Health education	Nutritional supplements	Home visits	Hormone supplements	Counselling
Number of studies[a]	23	10	8	7	4	4
Types of activities	• Mixed exercises • Strength • Aerobic • Balance • Coordination • Walking • Tai-chi • Mobility	• Nutrition • Medication • Falls prevention • Physical exercise • Social and community supports	• Protein • Calories • Milk fat globule membrane	• Falls and safety assessment • Information giving on municipal supports • Basic mobility exercises • Nurse-led, physio-led, or GP-led	• Testosterone • DHEA • Atamestane • Raloxifene • Tibolone (discontinued)	• CBT • Psychotherapy • Life-goal setting • Behavioural change

Figure 3. Overview of types of interventions for frailty 30/46 studies (65%) had more than one intervention.

CBT = cognitive behavioural therapy.

DHEA = dehydroepiandrosterone

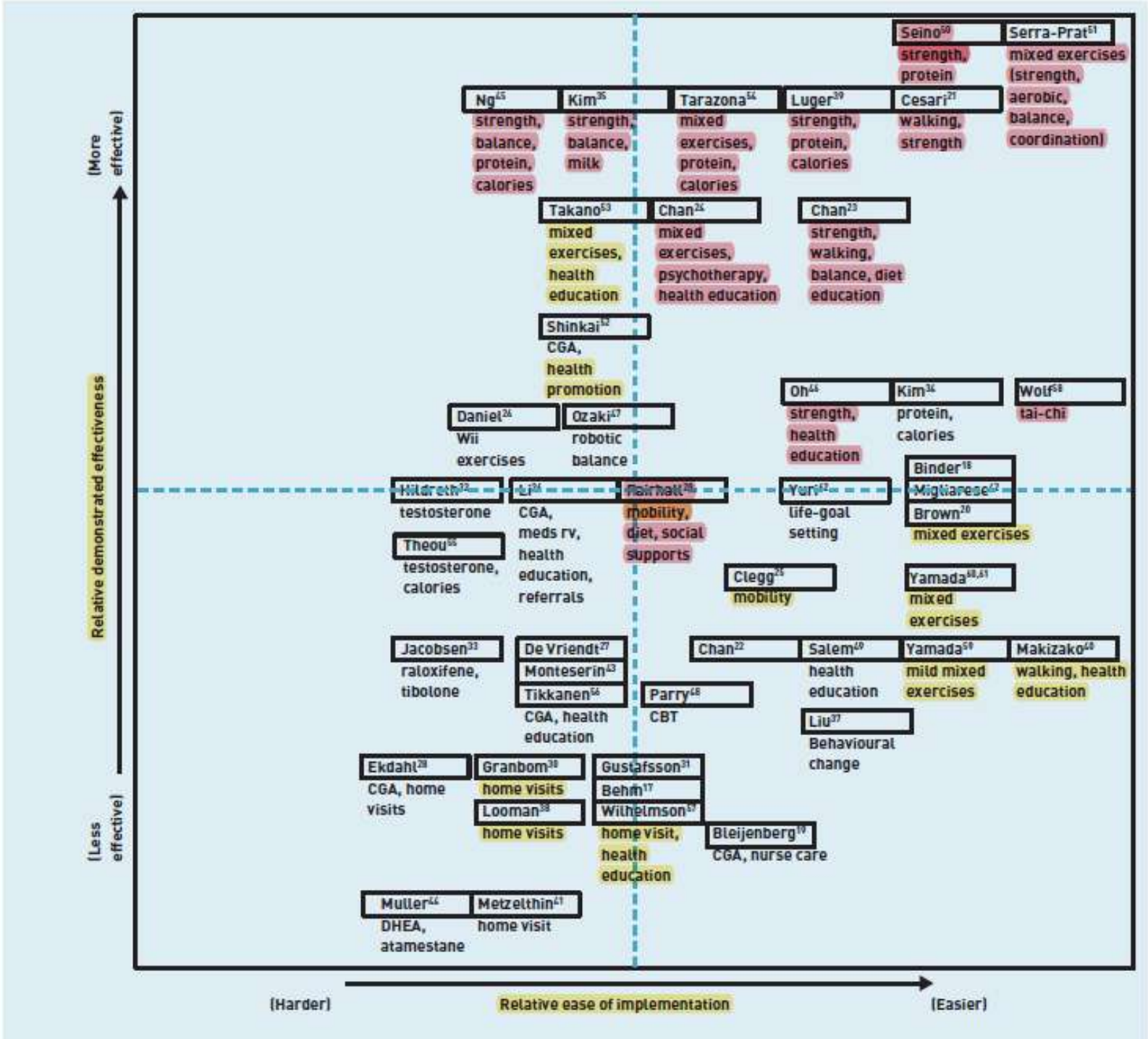


Figure 4. Comparison of interventions for frailty.

CBT = cognitive behavioural therapy
CGA = comprehensive geriatric assessment
DHEA = dehydroepiandrosterone. meds rv = medication
review.

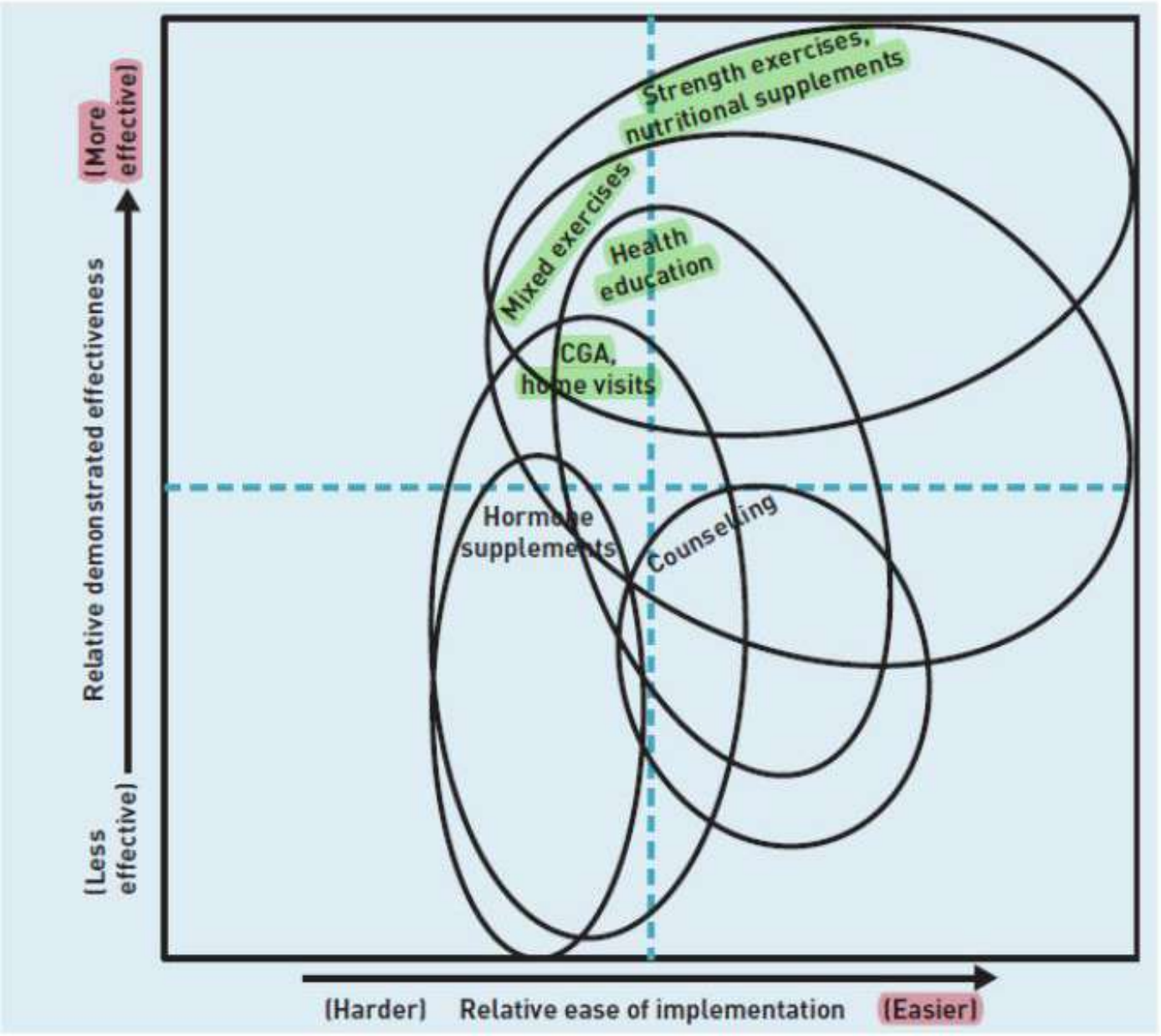


Figure 5. Overview of key intervention clusters.
CGA = comprehensive geriatric assessments

Najboljši vadbeni režim za preprečevanje krhkosti na primarnem nivoju:

- ✓ 20–25 minutna vadbena enota na domu
- ✓ 4 krat tedensko
- ✓ 15 vaj: 3 vaje za mišično moč rok,
  7 vaj za mišično moč nog,
  5 vaj za ravnotežje in koordinacijo.
- ✓ 10 ponovitev, 30 sec. odmora med serijami
- ✓ Napredovanje na 15 ponovitev v 2-3 mesecih

Napredek opazen v 3-6 mesecih, v manjšem obsegu tudi 12 mesecev po vadbenem programu.

Adherenca TD: sodelovanje pri telesni vadbi je ostalo visoko (90 %), pri nekaterih se je znižala na 50 %.

European guide for management of frailty at individual level including recommendations and roadmap

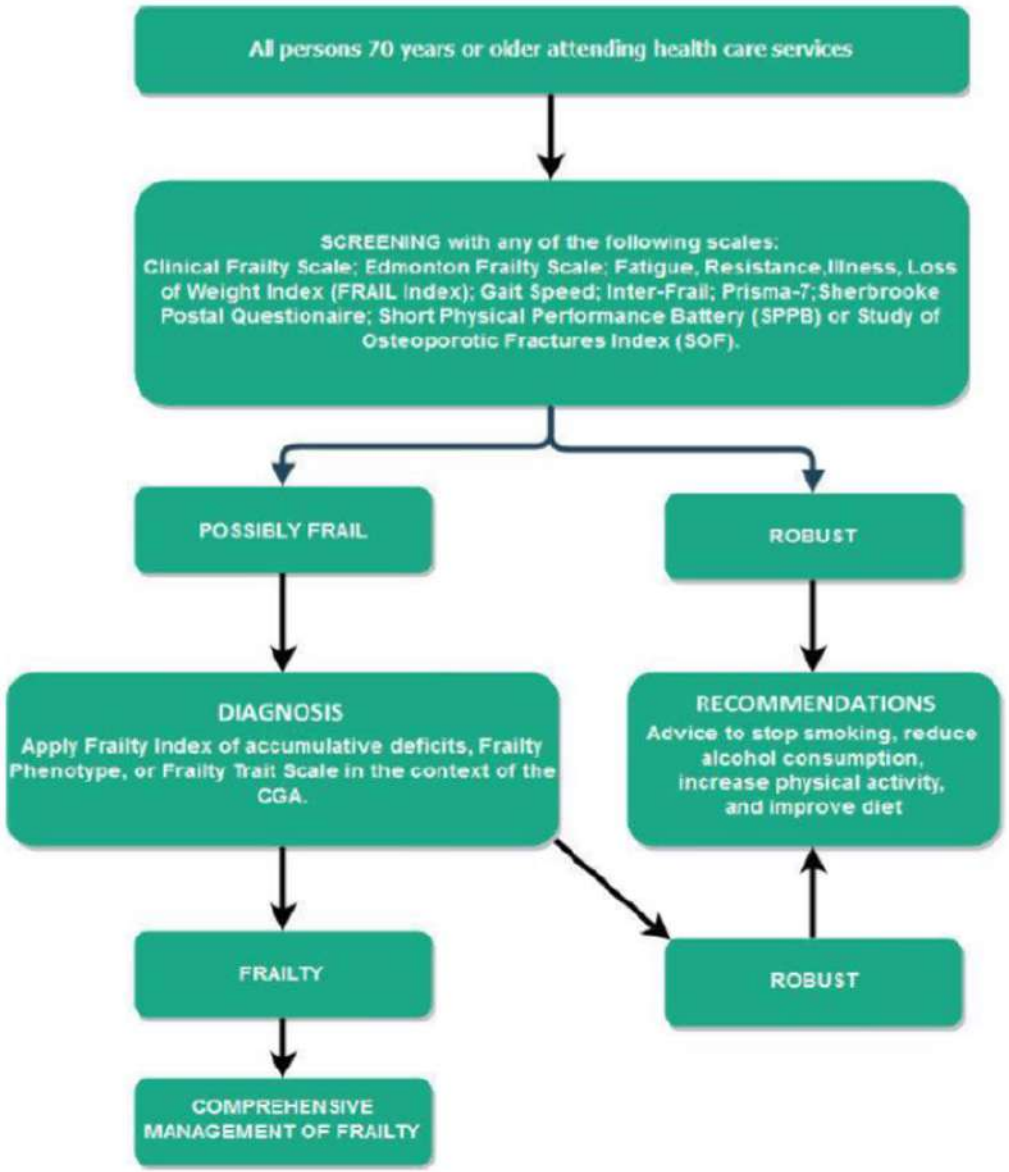
Co-funded by the Health Programme of the European Union

advantAGE MANAGING FRAILTY

Title:	European Guide for Management of Frailty at Individual Level Including Recommendations and Roadmap
Work Package Leader:	NIJZ
Work Package:	WP6
Author (s):	Branko Gabrovec and Eleftheria Antoniadou, Dagmar Soleymani, Tomasz Targowski, Ewa Kadalska, Luz López-Samaniego, Ana María Carriazo, Peter Csizmadia, Anne Hendry, Alpana Mair, Olatz Albaina Bacaicoa; Ivana Kršić; Elsa Dent, Ivan Eržen
Date of submission:	October 2019

This report is part of Joint Action '724099 / ADVANTAGE' which has received funding from the European Union's Health Programme (2014-2020).

Figure 1: Algorithm for the management of frailty at individual level



3.3.1.4 Physical Activity

Recommendation	Quality of Evidence (GRADE)	Level of Recommendation
Reduce inactivity and sedentary lifestyle	High	Strong
Multicomponent exercise programmes	high	Strong
Fall prevention programmes	High	Strong
Low to medium intensity	moderate	conditional
Combine exercise with dietary modification	Moderate	Conditional

Rationale: The creation of recommendations on physical exercise has more than one methodological problem, the one being the definition of frailty, which is variable between studies even though the core components of frailty are present in the various definitions. The second major limitation is that physical activity and exercise are not the same; also the interventions had differences in settings, type of instructor and duration of the intervention. Keeping in mind the limitations when comparing different studies, there are some key recommendations that can be deduced and these can help with frailty management.

Sedentary lifestyle is *per se* a risk factor both for the development of frailty as well as for its management. There is not enough evidence for the maximum time of sedentary behaviour that brings with it a risk of developing frailty, but there is some evidence that 7-9 h per day of sedentary behaviour are closely linked to the development of frailty (da Silva et al., 2017). For frail and pre-frail older people, multicomponent exercise seems to be more effective (King et al., 2002; Faber et al., 2006; Ginè-Garriga, 2010; Cadore et al., 2013; Kim et al., 2015; Ng et al., 2015). In multicomponent exercise we include endurance, strength, flexibility and balance exercises. There is no clear evidence about the setting, or the minimum duration of an intervention programme. As for the intensity, there is some evidence that the exercise load must be adapted to the individual capacities, so as a general idea for older people with frailty we advise low to medium intensity and gradually increase this, and for pre-frail people moderate to high and gradually increase this. Safety is another concern when older people are offered exercise programmes, especially when they are not supervised.

Also, there is moderate evidence that exercise and nutrition should combine to have better results, but evidence of multidimensional programmes that combine exercise with nutritional supplementation or cognitive interventions show some evidence in the literature.

- ✓ Telesna dejavnost je varna in učinkovita intervencija, ki lahko obrne proces krhkosti.
- ✓ Zmerno intenzivna telesna dejavnost lahko zmanjša napredovanje krhkosti v nekaterih starostnih skupinah (65+), visoko intenzivna telesna dejavnost pa znatno zmanjša možnost za nastanek krhkosti.
- ✓ Nizko intenzivna telesna dejavnost je bila neučinkovita pri upočasnitvi procesa krhkosti.
- ✓ Izboljšanje ravnotežja in zmanjšanje tveganja za padce je bolj pomembno za starejše s krhkostjo, ki so že izpostavljeni povečanemu tveganju padcev in poškodb.
- ✓ Organizirane, nadzorovane intervencije so učinkovitejše od samostojno izvedenih na domu starejše osebe.
- ✓ Pozitivni učinki večkomponentnih vadbenih programov na funkcionalne sposobnosti in splošno zdravje ljudi s krhkostjo.
- ✓ Vadbeni program naj sestavljen iz vzdržljivostne vadbe, vadbe za izboljšanje gibljivosti, ravnotežja in mišične moči.
- ✓ FITT: 3× na teden, nizka do zmerna intenzivnost, 30-45-minut.
- ✓ Vadba je učinkovitejša v zgodnejši fazi krhkosti.

Step safely- WHO

“Preprečevanje padcev lahko pomaga doseči cilje trajnostnega razvoja, povezane z zdravjem in blaginjo, dostojnim delom in varnimi, vključujočimi mesti. Svetovna skupnost bi morala aktivno iskati priložnosti za zmanjšanje naraščajoče škode, trpljenja in izgube, ki je/so posledica padcev”.

World Health Organization

Strategija dostopna na: https://www.who.int/publications/i/item/978924002191-4

Exercise for preventing falls in older people living in the community

Sherrington C et al (2019). Exercise for preventing falls in older people living in the community.
Cochrane Database of Systematic Reviews, Issue 1. Art. No.: CD012424.
DOI: 10.1002/14651858.CD012424.pub2.

Priporočena minimalna doza telesne dejavnosti, ki učinkuje pri preprečevanju padcev starejših je 50 ur, enakomerno razporejenih v 3-6 mesečno intervencijo.

Sherrington C, Fairhall NJ, Wallbank GK, Tiedemann A, Michaleff ZA, Howard K, Clemson L, Hopewell S, Lamb SE.
Exercise for preventing falls in older people living in the community.
Cochrane Database of Systematic Reviews 2019, Issue 1. Art. No.: CD012424.
DOI: 10.1002/14651858.CD012424.pub2.

PREVENTIVNO PRESEJANJE V PATRONAŽNEM VARSTVU

Vprašalnik za preventivni pregled na področju kroničnih nenalezljivih bolezni v patronažnem varstvu

1.Družinska anamneza
2. Vključevanje v presejalne programe
3. Vedenjski dejavniki tveganja:
Prehrana, Telesna dejavnost,
Kajenje in izpostavljenost prahu ter kemikalijam,
Pitje alkoholnih pijač (AUDIT10),
Doživljanje stresa, Depresija (PHQ9).
4. Osteoporoza (FRAX)
5. Socialne determinante zdravja
6. Meritve
7. Sedem opozorilnih znamenj za raka
8. Varnostna vprašanja

Enako kot v ADM

9. Vprašalnik družinski APGAR
10. Vprašalnik družina in problemi v družini

11. Ocena dejavnikov tveganja preiskovane osebe za padce (pri starejših od 64 let)

Dodatno v PV

Obravnava pacienta, ki že ima diagnozo KNB

139 MS
v patronažnem varstvu

890 pregledov

83,3 min
trajanje obravnave

32,1%

67,9 %

77,1 let
(34-97 let, največ 79 let)

ALGORITEM PRESEJANJA ZA PADCE V PV

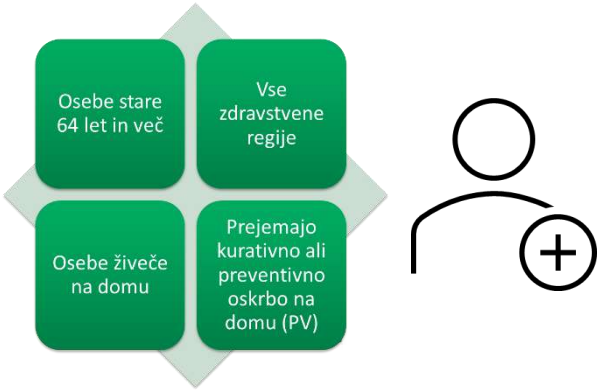
KVANTITATIVNA

KVALITATIVNA

Ocena potreb in ovir s strani **uporabnika**
Ocena izvedljivosti intervencije s strani **izvajalca**

UKREPI

Preverjanje varnosti doma s svetovanjem



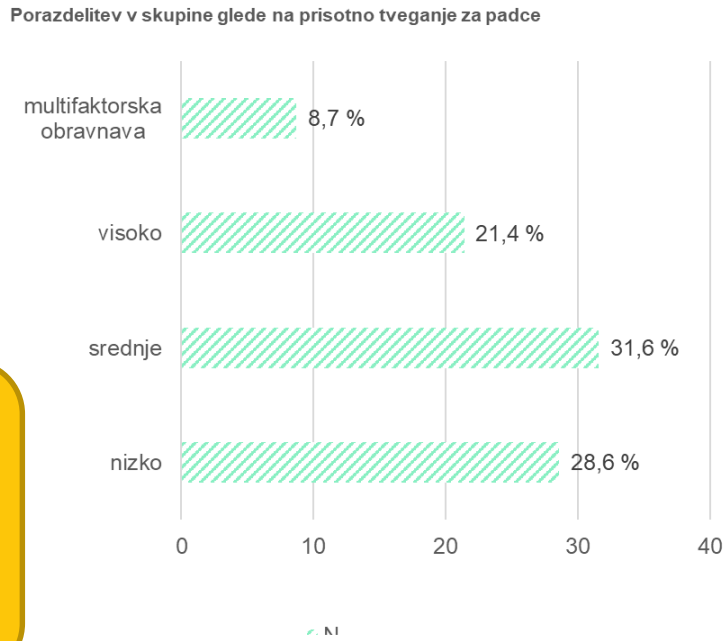
Rezultati Ocene dejavnikov tveganja za padce v projektu MoST

5984

AGE 80 let

67 % žensk
33 % moških

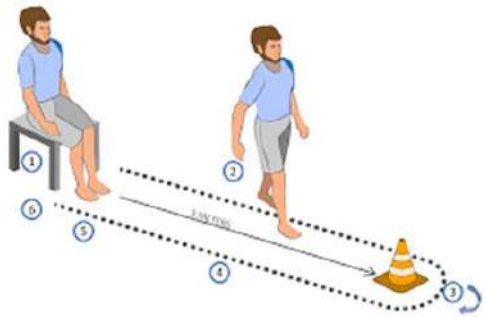
V povprečju živi na domu 61,7 % Slovencev, starejših od 64 let za katere lahko pričakujemo, da bodo v prihodnjem letu vsaj enkrat padli.



Rezultati funkcijskega testiranja (TUG) v projektu MoST

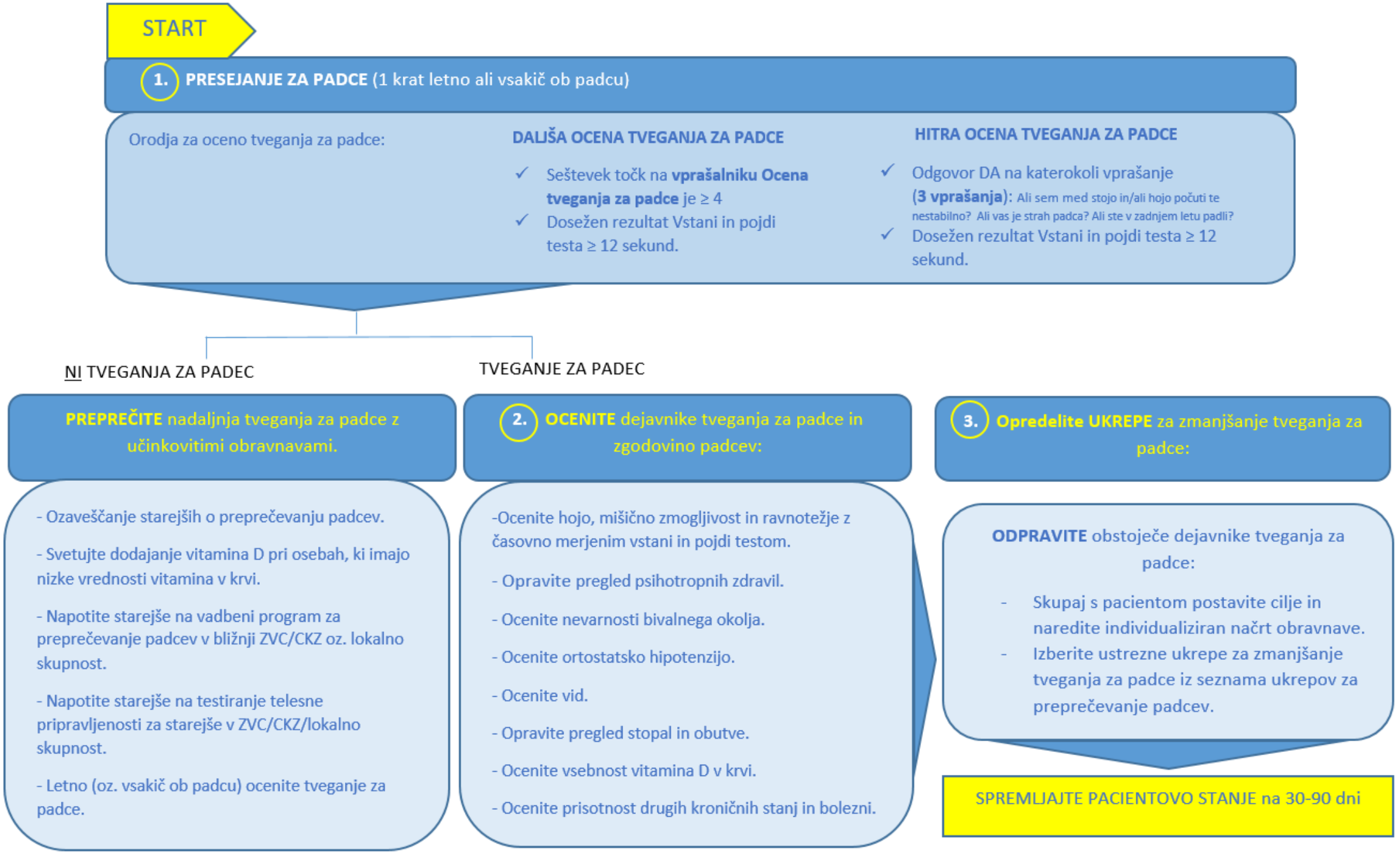
4037

Pri 83,35% vseh testiranih je dosežen rezultat funkcijskega testa 12 sekund ali več, kar jih avtomatično uvrsti med osebe z vsaj srednjim tveganjem za padce.



NIJZ Nacionalni inštitut za javno zdravje
KREPITEV ZDRAVJA za vse
EVROPSKA UNIJA EVROPSKI STRUKTURNI IN INVESTICIJSKI SKLADI NALOŽBA V VAŠO PRIHODNOST

ALGORITEM ZA OCENO TVEGANJA ZA PADCE IN UKREPI ZA PREPREČEVANJE PADCEV PRI STAREJŠIH OSEBAH NA DOMU




TD, mišična zmogljivost, ravnotežje in hoja
Prilagoditev domačega okolja
Prilagoditev prehrane
Ureditev jemanja zdravil, pregled stopal in obutve
Obravnava ortostatske hipotenzije, motenj vida
Skrb za duševno zdravje
UKREPI ZA PREPREČEVANJE PADCEV

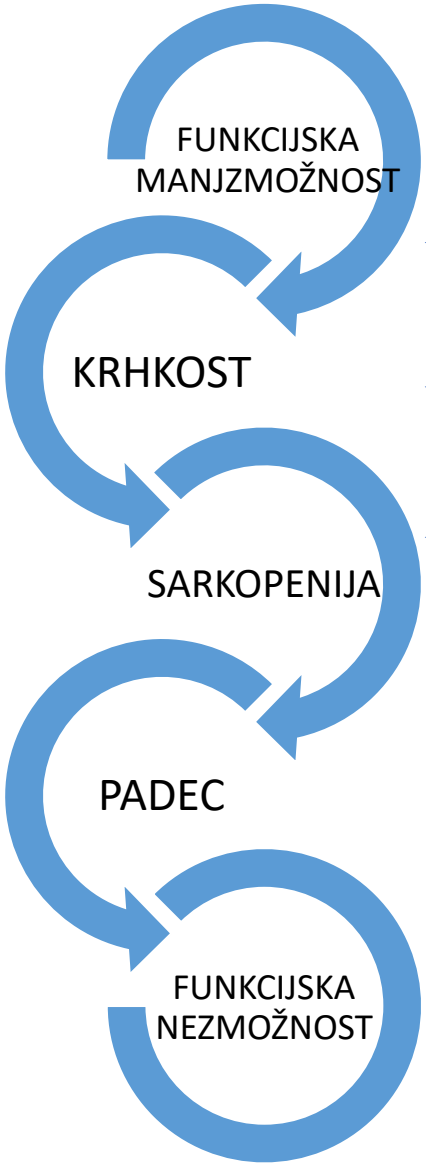
Slovenski zdravstveni sistem

Preprečevanje krhkosti- preventiva

Presejanje na funkcijsko manjzmožnost in testiranje telesne zmogljivosti starejših v CKZjih

Primarni nivo: ZVC/CKZ
Preventivno naslavljanje krhkosti skozi gibalno opismenjevanje z “vadbo na napotnico”

Primarni nivo: od leta 2021 sistematično presejanje za padci na domu (DMS v PV)
Bolnišnice ?
DSO ?



Rehabilitacija krhkosti- kurativa in sekundarna preventiva

vse fiziot. ambulante, bolnišnična FT, DSO

DSO, vse fiziot. amb., specialistične amb. In klinike

tjasa.knific@nijz.si