How to improve surgical outcomes for older cancer patients

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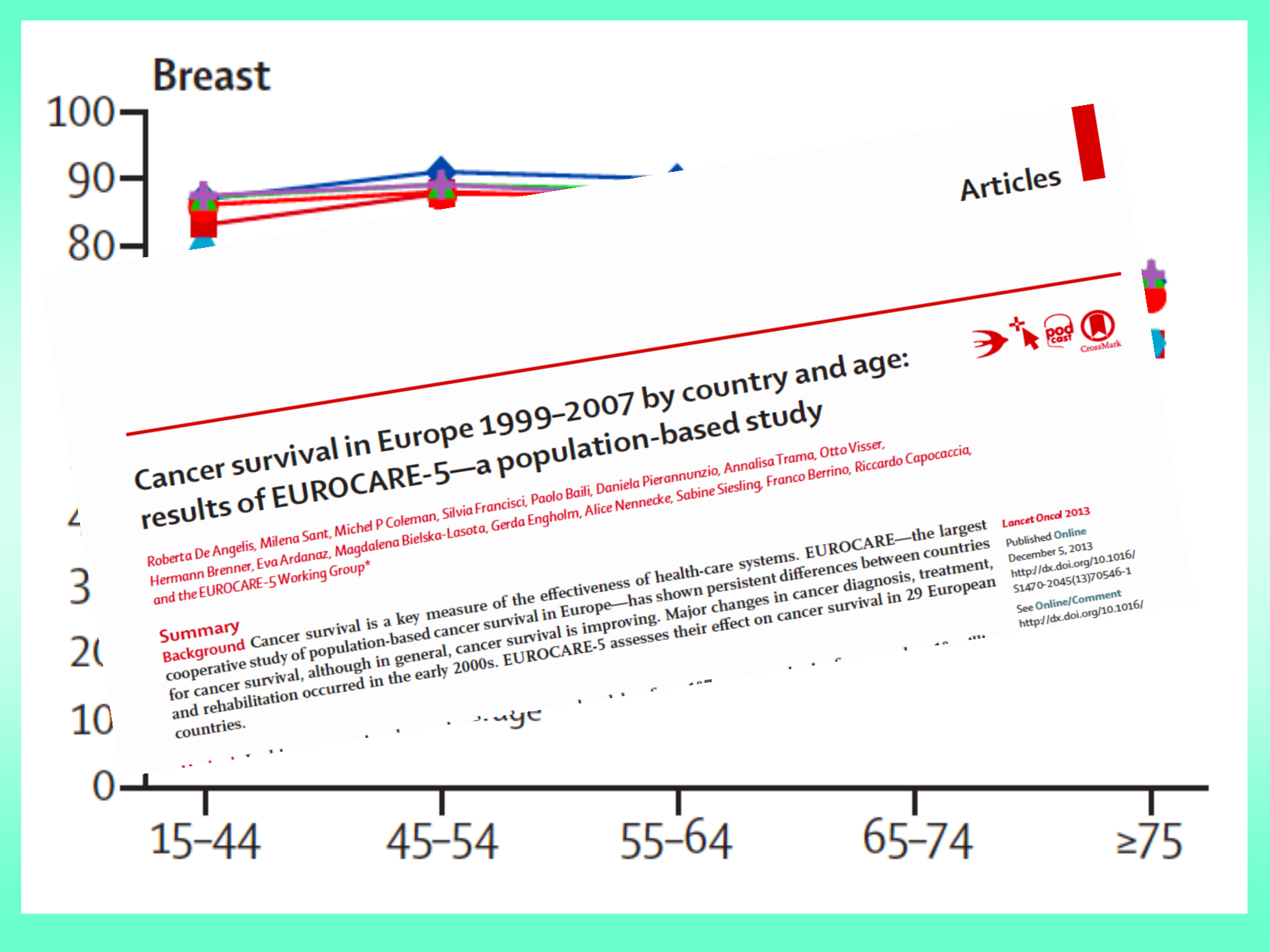
I declare no conflict of interest



Articles

Cancer survival in Europe 1999–2007 by country and age: results of EUROCARE-5—a population-based study

Roberta De Angelis, Milena Sant, Michel P Coleman, Silvia Francisci, Paolo Baili, Daniela Pierannunzio, Annalisa Trama, Otto Visser, Hermann Brenner, Eva Ardanaz, Magdalena Bielska-Lasota, Gerda Engholm, Alice Nennecke, Sabine Siesling, Franco Berrino, Riccardo Capocaccia, and the EUROCARE-5 Working Group*

Summary

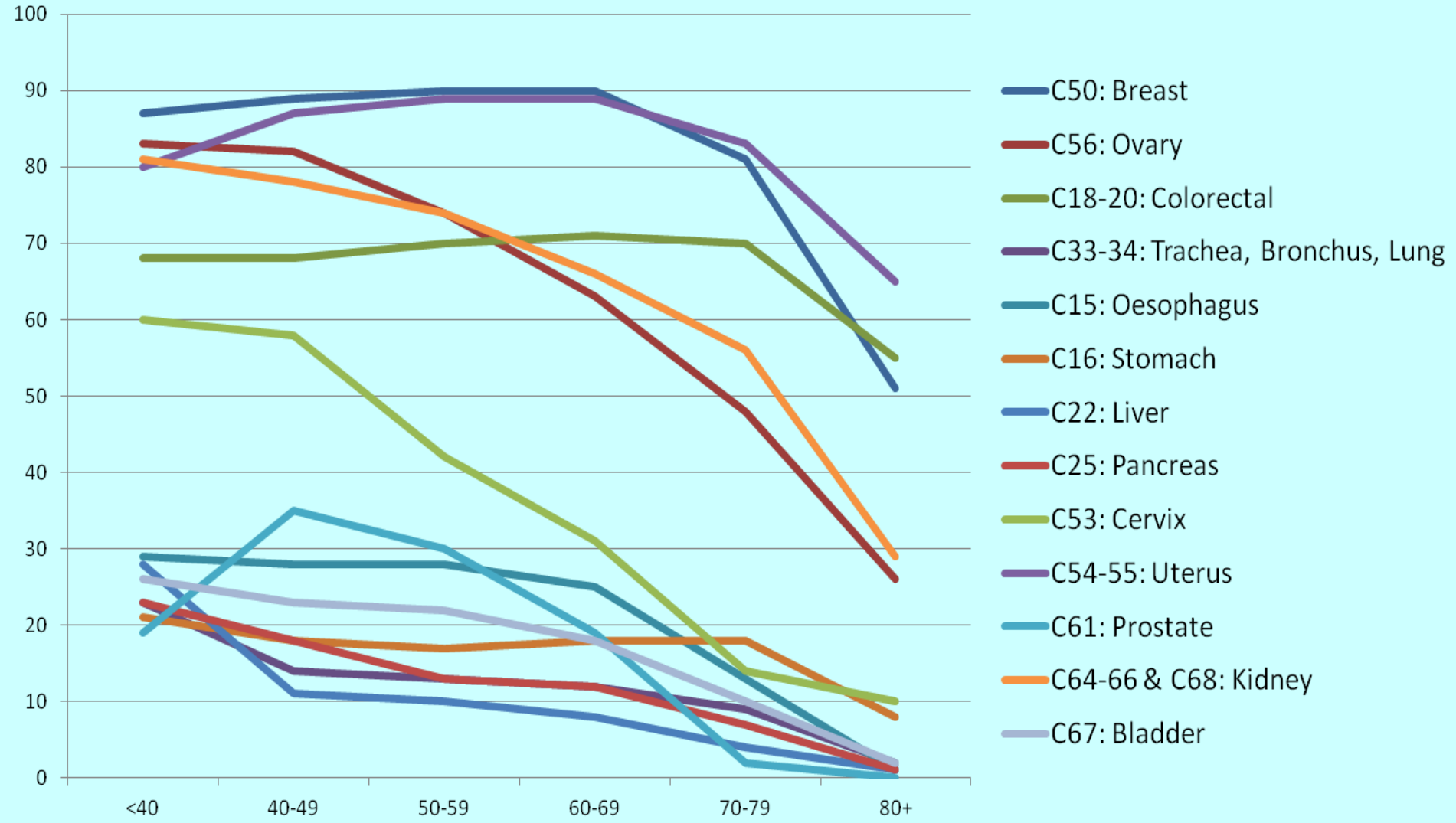
Background Cancer survival is a key measure of the effectiveness of health-care systems. EUROCARE—the largest cooperative study of population-based cancer survival in Europe—has shown persistent differences between countries for cancer survival, although in general, cancer survival is improving. Major changes in cancer diagnosis, treatment, and rehabilitation occurred in the early 2000s. EUROCARE-5 assesses their effect on cancer survival in 29 European countries.

Lancet Oncol 2013

Published Online December 5, 2013 http://dx.doi.org/10.1016/S1470-2045(13)70546-1

See Online/Comment http://dx.doi.org/10.1016/

surgical resections by age



comorbidity
social status
cognitive functioning
nutritional status
physical performance

Contribute to daily functioning & patient's resilience to stressors

Surgery is a MAJOR stressor

Surgery also impacts on long-term outcomes (1-yr mortality rate)

Van Gestel YR. Ann Surg Oncol 2013:20;371-80

Older pts experience >60% decline in self-care after surgery

Hamaker ME. J Ger Oncol 2015:6;153-64

preventing functional decline
&
optimizing preoperative conditions

strategies to improve short-/long-term outcomes

How to limit the negative surgical impact?

1) Prehabilitation:

optimizing functional capacity, exercise training, nutrition, controlling comorbidities

2) Surgery:

minimizing tissue damage, keyhole

3) Rehabilitation:

early mobilization/discharge, eERAS

operative morbidity & mortality

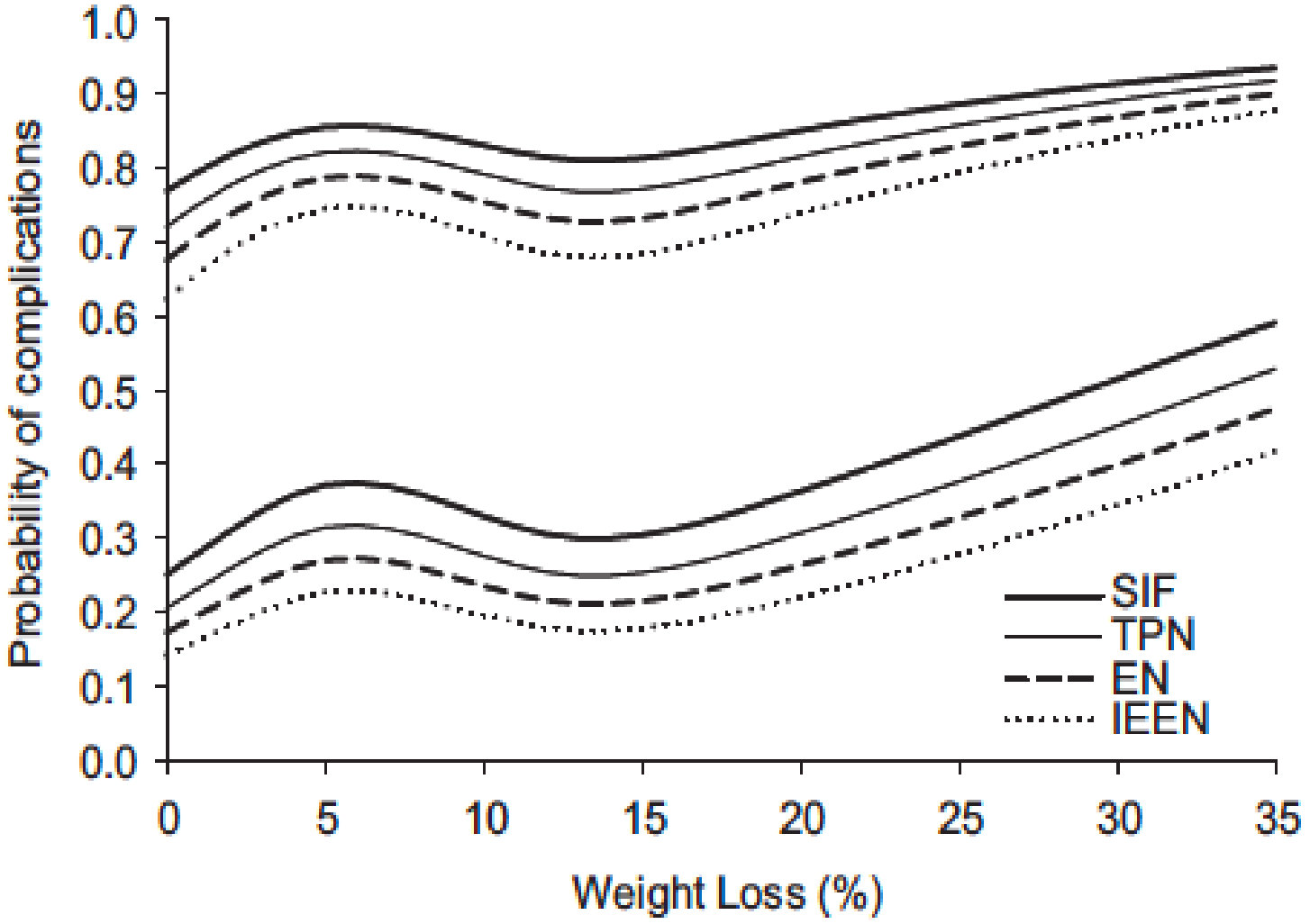
- Chest infection
- Abdomin
- plicemia
- ound deshiscence
- Anastomotic leek
- Renal dysfunction
- Hepatic failure

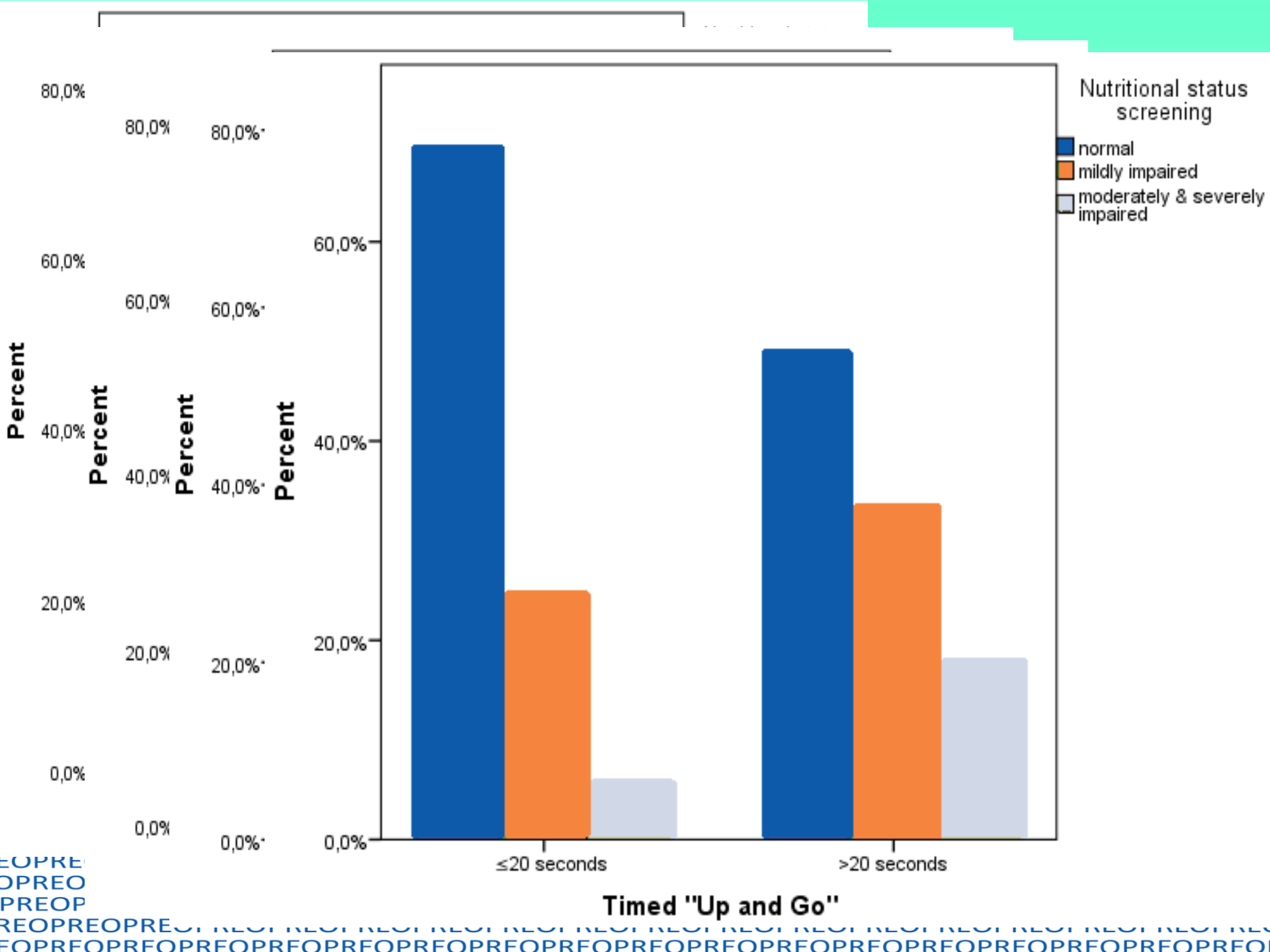
ALL ASSOCIATE TO MALNOURISHMENT

longer hospital stay
increased costs

Bozzetti F. Clinical Nutrition 2001

complications in high & low risk patients




Nutritional status screening
normal
mildly impaired
moderately & severely impaired
Percent
80,0%
60,0%
40,0%
20,0%
0,0%
≤20 seconds
>20 seconds
Timed "Up and Go"

nutritional status
&
postoperative outcome?

Available online at www.sciencedirect.com

ScienceDirect

EJSO xx (2016) 1–9

EJSO
the Journal of Cancer Surgery
www.ejso.com

Poor nutritional status is associated with other geriatric domain impairments and adverse postoperative outcomes in onco-geriatric surgical patients – A multicentre cohort study

M.G. Huisman [a,*], G. Veronese [b,e], R.A. Audisio [c], G. Ugolini [b], I. Montroni [b,f], G.H. de Bock [d], B.L. van Leeuwen [a], for the PREOP study group

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[b] University of Bologna, S. Orsola Malpighi Hospital, Department of Surgery, Via Pietro Albertoni, 15, 40138, Bologna, Italy

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Nutrition 31 (2015) 612–614

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Nutrition

journal homepage: www.nutritionjrnl.com

Special article

Tailoring the nutritional regimen in the elderly cancer patient

Federico Bozzetti M.D. *

Faculty of Medicine, University of Milan, Italy

Keywords:
Water requirement
Energy requirement
Protein requirement
Macronutrient requirement

A B S T R A C T

Our knowledge of the macronutrient requirement of elderly cancer patient is still incomplete and mainly relies on studies of elderly (healthy) people and populations of cancer patients including both adult and elderly subjects. Patients with minor nutritional deterioration do not require any specific nutritional regimen, but cachectic patients do. Total energy expenditure can be unchanged or lower in advanced weight-losing patients (when compared with matched healthy controls) because the higher resting metabolic expenditure can be offset by reduced physical activity, and it approximates to 25-28 Kcal/kg/d. Protein requirement is probably 1.5 g amino acid (AA)/kg/d or more, especially if the goal is increased lean body mass. However, the final balance depends not only on the quantity of AA but also their quality: diets including a high percentage of essential AA and especially of branched-chain ones and leucine in particular, are advocated. Total fluid load should be prudent, around 25-30 ml/kg/d.

Prehabilitation & Physi

Available online at www.sciencedirect.com

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EJSO

the Journal of Cancer Surgery

www.ejso.com

EJSO 42 (2016) 28–38

ELSEVIER

CrossMark

Review

Exercise intervention in people with cancer undergoing neoadjuvant cancer treatment and surgery: A systematic review

L. Loughney [a,b,*], M.A. West [a,b,d], G.J. Kemp [b,c], M.P.W. Grocott [a,b], S. Jack [a,b]

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[b] Integrative Physiology and Critical Illness Group, Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, CE93, MP24, Tremona Road, Southampton, SO16 6YD, UK
[c] Department of Musculoskeletal Biology and MRC – Arthritis Research UK Centre for Integrated Research into Musculoskeletal Ageing (CIMA), Faculty of Health and Life Sciences, University of Liverpool, Liverpool, UK
[d] Academic Unit of Cancer Sciences, Faculty of Medicine, University of Southampton, South Academic Block, Tremona Road, Southampton, SO16 6YD, UK

Accepted 30 September 2015
Available online 23 October 2015

Objective Assessment of Physical Fitness & Surgery

1,418 ps underwent colorectal surgery

Pooled oxygen consumption at anaerobic threshold & peak oxygen consumption were predictive of complications

Variables derived from cardiopulmonary exercise testing are predictive of postoperative complications & hospital length of stay

Lee CHA Dis Colon Rectum 2018 Mar;61(3):400-409.

Old age depression

Death of sig ical reasons, health and/or cardiovc , cancer, nutritional d cial relations

Belief that c nal" in older

Old age de sed/treated

Depression v comorbidity with org masking

Postoperative Delirium - POD

Postoperative Delirium - POD

- prevalence in older patients 12-60%
- in-hospital mortality 2-3 times higher than no POD
- poor long-term outcomes
- poor functional/cognitive recovery
- increased costs

Postperative Delirium - POD

risk factors for POD:

advanced age

comorbidities

preoperative fasting/dehydration

hypo-/hyper-natraemia

length of surgery

postoperative pain

Postperative Delirium - POD

If POD is detected, patients should not be discharged from the recovery room without having started aetiology-based and symptom-based treatment

The longer the duration of delirium and the later the treatment is started, the more the cognitive decline

POD should be monitored at least once per shift due to its fluctuating course

EJA

Eur J Anaesthesiol 2017; **34**:192–214

GUIDELINES

European Society of Anaesthesiology evidence-based and consensus-based guideline on postoperative delirium

César Aldecoa, Gabriella Bettelli, Federico Bilotta, Robert D. Sanders, Riccardo Audisio, Anastasia Borozdina, Antonio Cherubini[1], Christina Jones, Henrik Kehlet, Alasdair MacLullich, Finn Radtke, Florian Riese, Arjen J.C. Slooter, Francis Veyckemans, Sylvia Kramer, Bruno Neuner, Bjoern Weiss and Claudia D. Spies[2]

The purpose of this guideline is to present evidence-based and consensus-based recommendations for the prevention and treatment of postoperative delirium. The cornerstones of the guideline are the preoperative identification and handling of patients at risk, adequate intraoperative care, postoperative detection of delirium and management of delirious patients. The scope of this guideline is not to cover ICU delirium. Considering that many medical disciplines are involved in the treatment of surgical patients, a team-based approach should be implemented into daily practice. This guideline is aimed to promote knowledge and education in the preoperative, intraoperative and postoperative setting not only among anaesthesiologists but also among all other healthcare professionals involved in the care of surgical patients.

Published online 9 February 2017

Introduction

The European Society of Anaesthesiology (ESA) is committed to develop evidence-based clinical guidelines of

Committee chose the members of the Task Force (CDS, CA, GB, FB and RDS) based on their clinical and

per-operative care

post-operative care

esso
THE EUROPEAN SOCIETY OF SURGICAL ONCOLOGY

SIOG
INTERNATIONAL SOCIETY OF GERIATRIC ONCOLOGY

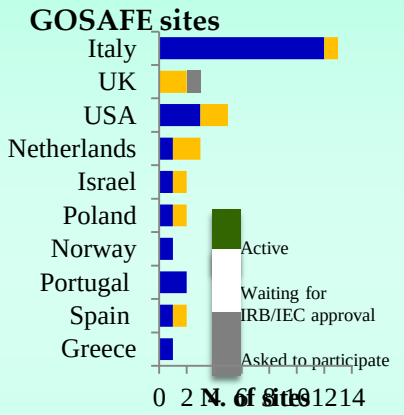
GO SAFE study

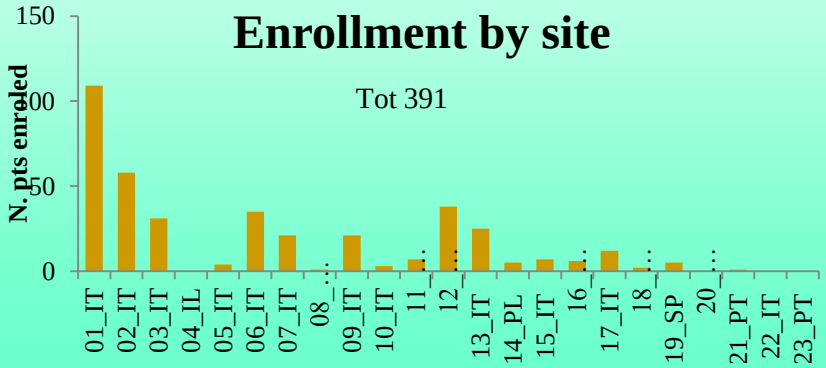
Geriatric Oncology Surgical Assessment and Functional rEcovery after Surgery

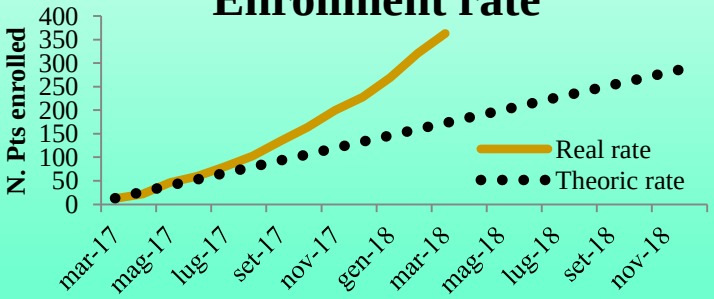
@GOSAFEstudy

GO SAFE study

Site ID	Site name	Country	PI	Opening date	PTs enrolled at 12.04.2018
01_IT	Osp. Infermi Faenza	Italy	G.Ugolini	06/02/2017	109
02_IT	Osp. Morgagni Pierantoni, Forlì	Italy	G. Ercolani	06/02/2017	58
03_IT	Osp. Ceccarini Riccione,	Italy	G. Garulli	09/05/2017	31
04_IL	Assaf Harofeh	Israel	N. Haim	05/07/2017	0
05_IT	AUSL Piacenza, Piacenza	Italy	P. Capelli	07/07/2017	4
06_IT	Humanitas, Milano	Italy	A. Spinelli	14/07/2017	35
07_IT	Osp.S. Matteo degli infermi, Spoleto	Italy	L. Marano	26/07/2017	21
08_US	Brigham and Women's Hospital, Boston	USA	M. Jaklitsch	18/10/2017	1
09_IT	Clinica S. Rita, Vercelli	Italy	M.Trompetto	05/09/2017	21
10_IT	Istituto Tumori Giovanni Paolo II Bari	Italy	R.De Luca	22/11/2017	3
11_US	University of Pensylvenia Medical Center	USA	N. Saur	22/11/2017	7
12_NL	Groeningen University Hospital,	The Netherlands	B. Van Leeuwen	30/11/2017	38
13_IT	Ospedale Niguarda , Milano	Italy	G. Ferrari	29/11/2017	25
14_PL	Jagiellonian Univ. Medical College, Krakow	Poland	J. Kenig	12/12/2017	5
15_IT	Ospedale S. Martino Genova	Italy	S. Scabini	06/12/2017	7
16_NO	Oslo University Hospital	Norway	A. Nesbakken	12/12/2017	6
17_IT	ASST Monza, PO Desio (MB)	Italy	A. Costanzi	18/12/2017	12
18_GR	Medical School, Aristotle University of Thessaloniki	Greece	O. Ioannidis	23/01/18	2
19_SP	Hospital Universitario y Politécnico La Fe, Valencia	Spain	G. Pellino	09/02/18	5
20_US	Roger William Medical Centre Providence RI	USA	P. Somasundcar	27/02/18	0
21_PT	Unidade Local de Saúde do Litoral Alentejano (ULSLA), Santiago do cacem	Portugal	D. Sousa	13/03/18	1
22_IT	Ospedale S. Andrea, Roma	Italy	G. Balducci	27/03/18	0
23_PT	General Surgery dept,Hospital Sao Francisco Xavier (CHLO)	Portugal	C. Santos	04/04/18	0







STUDY DESIGN

international “real world” phase 4 trial

g
5D-5L
TEST
labs

O SAFE

Optimizing Surgical Quality Datasets to Care for Older Adults: Lessons from the American College of Surgeons NSQIP Geriatric Surgery Pilot

Julia R Berian, MD, MS, Lynn Zhou, PhD, Melissa A Hornor, MD, Marcia M Russell, MD, FACS, Mark E Cohen, PhD, Emily Finlayson, MD, MS, FACS, Clifford Y Ko, MD, MS, MSHS, FACS, FASCRS, Thomas N Robinson, MD, MS, FACS, Ronnie A Rosenthal, MS, MD, FACS

BACKGROUND: Surgical quality datasets can be better tailored toward older adults. The American College of Surgeons (ACS) NSQIP Geriatric Surgery Pilot collected risk factors and outcomes in 4 geriatric-specific domains: cognition, decision-making, function, and mobility. This study evaluated the contributions of geriatric-specific factors to risk adjustment in modeling 30-day outcomes and geriatric-specific outcomes (postoperative delirium, new mobility aid use, functional decline, and pressure ulcers).

STUDY DESIGN: Using ACS NSQIP Geriatric Surgery Pilot data (January 2014 to December 2016), 7 geriatric-specific risk factors were evaluated for selection in 14 logistic models (morbidities/mortality) in general-vascular and orthopaedic surgery subgroups. Hierarchical models evaluated 4 geriatric-specific outcomes, adjusting for hospitals-level effects and including Bayesian-type shrinkage, to estimate hospital performance.

RESULTS: There were 36,399 older adults who underwent operations at 31 hospitals in the ACS NSQIP

post-operative delirium:
3,650 (12.1%) pts

cognitive impairment
competency in consenting
preoperative palliative care
mobility issues
history of falls (1 yr)
functional status (ADL-IADL)
home living status

Functional decline @ discharge: 13,650 (42.9%) pts

cognitive impairment
competency in consenting
preoperative palliative care
mobility issues
history of falls (1 yr)
functional status (ADL-IADL)
home living status

EBioMedicine 21 (2017) 29–36

Contents lists available at ScienceDirect

Keywords:
Aging
Biomarker
Prediction
Epigenetic clock
Telomere length

types of predictors, which may shed light on the aging process and provide further understanding of what contributes to healthy aging. Thus far, the most promising, new biological age predictor is the epigenetic clock; however its true value as a biomarker of aging requires longitudinal confirmation.

THE GERONTOLOGICAL SOCIETY OF AMERICA®

Journals of Gerontology: Medical Sciences
cite as: *J Gerontol A Biol Sci Med Sci*, 2018, Vol. 00, No. 00, 1–6
doi:10.1093/gerona/gly094
Advance Access publication June 18, 2018

OXFORD

Research Practice

A Frailty Index for UK Biobank Participants

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[1]Department of Medical Epidemiology and Biostatistics, Karolinska Institutet, Stockholm, Sweden. [2]Department of Psychology, University of Southern California, Los Angeles.

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Received: December 12, 2017; Editorial Decision Date: April 8, 2018

Decision Editor: Anne Newman, MD, MPH

Abstract

Background: Frailty indices (FIs) measure variation in health between aging individuals. Researching FIs in resources with large-scale genetic and phenotypic data will provide insights into the causes and consequences of frailty. Thus, we aimed to develop an FI using UK Biobank data, a cohort study of 500,000 middle-aged and older adults.

Methods: An FI was calculated using 49 self-reported questionnaire items on traits covering health, presence of diseases and disabilities, and

American Federation Aging Research

afar

american federation
for aging research

- **marker/s not found yet**
- **does it exist?**

1. effects of multiple chronic diseases cannot be separated from normal aging

2. different tissues may age at different paces

The Epigenetic Clock

DNAmAge - DNA methylation age

2 clock measures are the most robust predictors of chronologic aging

Horvath S: Genome Biol 2013

Hannum G: Mol Cell 2013

high correlation with age

Horvath r=.96 Hannum r=.91

small deviation from calendar age

Horvath 3.6yrs Hannum 4.9yrs

developed in large series

Horvath 8,000 Hannum 656

cover the entire life span

& different ethnic populations

Horvath and Hannum clock has the

Chen BH, Aging 2016

Clin

1 Very Fit –
and motivate
regularly. The

2 Well – Pe
symptoms bu
exercise or ar

3 Managing
are well cont
beyond routi

4 Vulnerabl
daily help, oft
complaint is b
during the da

5 Mildly Fra
evident slowi
(finances, tran
tions). Typical
shopping and
and housewo

6 Moderate
outside activi
often have pr
bathing and n
standby) with

1	Very fit, Robust, active, energetic and motivated. Exercise regularly	Would score 0 on ADL, IADL, have no illnesses on the CCI, and a MMSE of over 23, no recent weight loss	Easy to identify. ?age cut off of less then 80?
2	Well, people who have no active disease symptoms but are less fit than cat 1. Exercise or are active occasionally	As above but maybe have well controlled hypertension or diabetes	Rel easy to ID. Age cut off of 80
3	Managing well. Medical problems well controlled, not regularly active beyond routine walking	CCI score low but not zero. No ADL score. No IADL score. No MMSE score. Not nutrition score	Age cut off of 85
4	Vulnerable. Not dependant on others for daily help but symptoms limit activities	Some CCI scores. No ADL score but low IADL scores. No MMSE score	Age cut off 85
5	Mildly frail. More evidence slowing. Need help with heavy housework, transportation, medication	Some CCI scores, higher IADL scores. No ADL scores. Some MMSE impairment	Age Any
6	Moderately Frail. Need help with all outside activities and some inside activities such as bathing.	ADL scores rising, high IADL. Moderate MMSE	Age any
7	Severely frail but stable and not at high risk of imminent death	High IADL, ADL, MMSE and CCI	Any age
8	Very severely frail	High IADL, ADL, MMSE and CCI	Any age
9	Terminally ill, may or may not be frail	?	?

dependent for
use (physical or
able and not at
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e end of life. This
life expectancy
ise evidently frail.

of dementia.
forgetting the
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life events well.

re without help.

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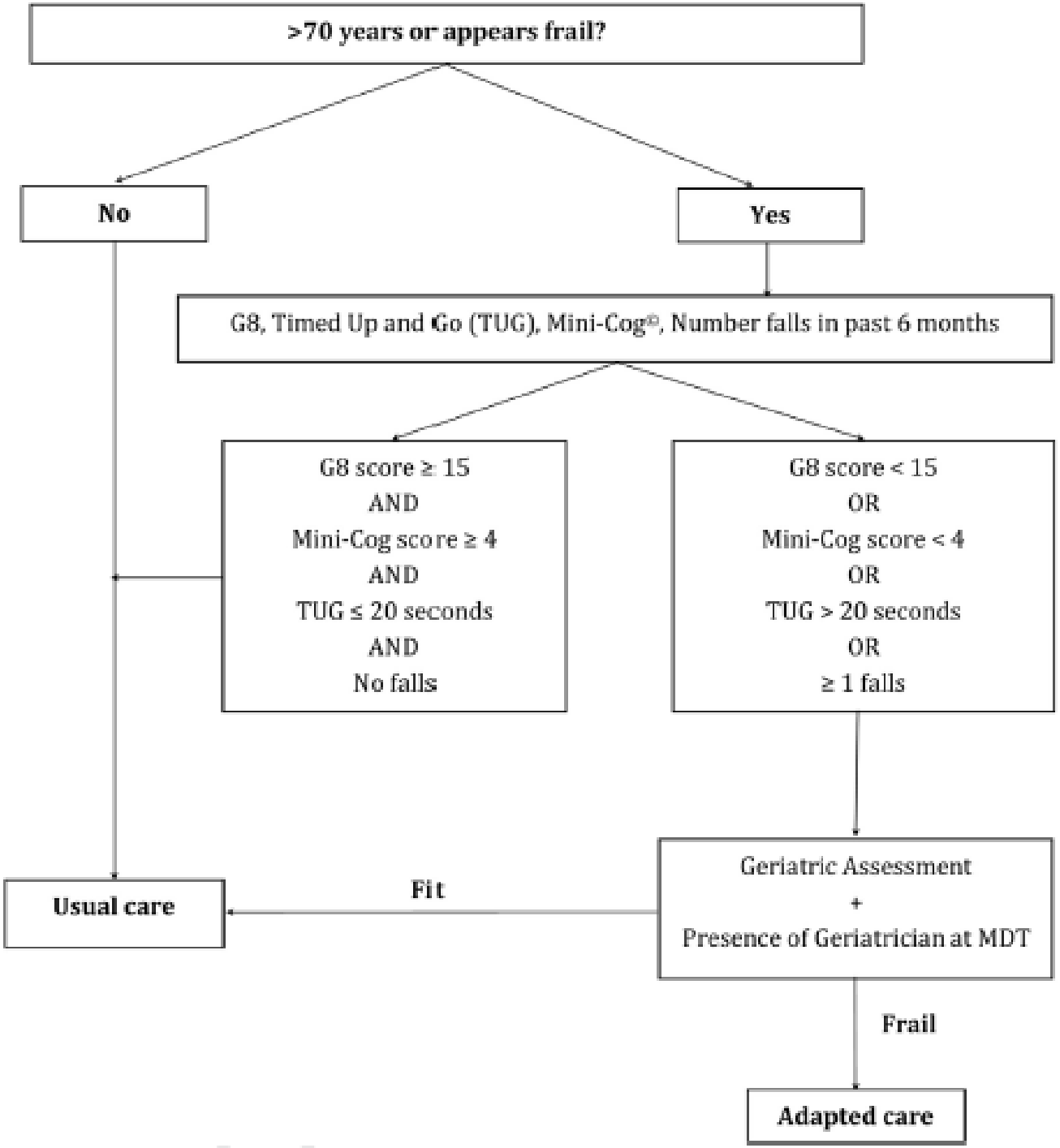
>70 years or appears frail?
No
Yes
G8, Timed Up and Go (TUG), Mini-Cog©, Number falls in past 6 months
G8 score ≥ 15
AND
Mini-Cog score ≥ 4
AND
TUG ≤ 20 seconds
AND
No falls
G8 score < 15
OR
Mini-Cog score < 4
OR
TUG > 20 seconds
OR
≥ 1 falls
Usual care
Fit
Geriatric Assessment
+
Presence of Geriatrician at MDT
Frail
Adapted care


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