

# Cancer rehabilitation...Anything but a luxury!

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# Topics

- Where are we now – results from the Netherlands
- Case report
- Oversight of functional problems
- Special attention for cognitive disorders
- Side effects of various cancer treatments
- What can rehabilitation offer?
- Importance of team effort

# Take home message

- Oncological rehabilitation is no luxury
- Importance of stepped care & affordable care
- Return to work (RTW) dependent on many factors
- Cognitive problems can be very persistent & hamper RTW



# ZEELAND





# May I introduce...

- Pia Pottuit, 60 jaar
- Married, 2 kids
- Bruinisse, Zeeland
- Breastcancer in 2014
- Referred bij G.P. september 2018
- Communications advisor large city
- 39 years civil servant
- Likes dancing, tennis, travelling



# Treatment

- Lumpectomy
- Chemotherapy, temporary “overdosing”
- Radiotherapy
- No anti hormonal therapy / immune-therapy
- No paramedic treatment so far



# Symptoms

1. Cognitive: memory, concentration, hyper-arousal, finding words, planning, double-tasks: cannot handle job anymore
2. Loss of balance while standing & walking (neuropathy): stopped dancing & tennis
3. Weight gain 18 kilo & DM 2 de novo
4. Loss of condition, persistent fatigue
5. Anxiety, insecurity, loss of self-esteem

**“Am I developing Alzheimer’s disease?”**

A typical oncological patient?





# QuickScan

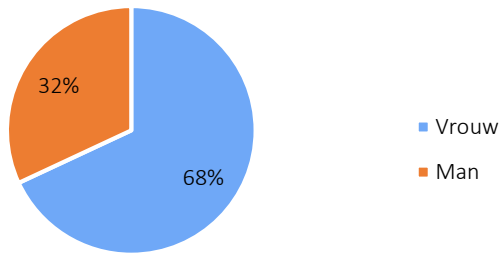


-  Ondersteuningsconsulent
-  QuickScans
-  Steunpunt

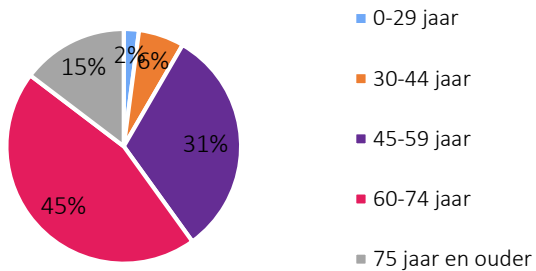


# 385 responders from 15 medical centers.

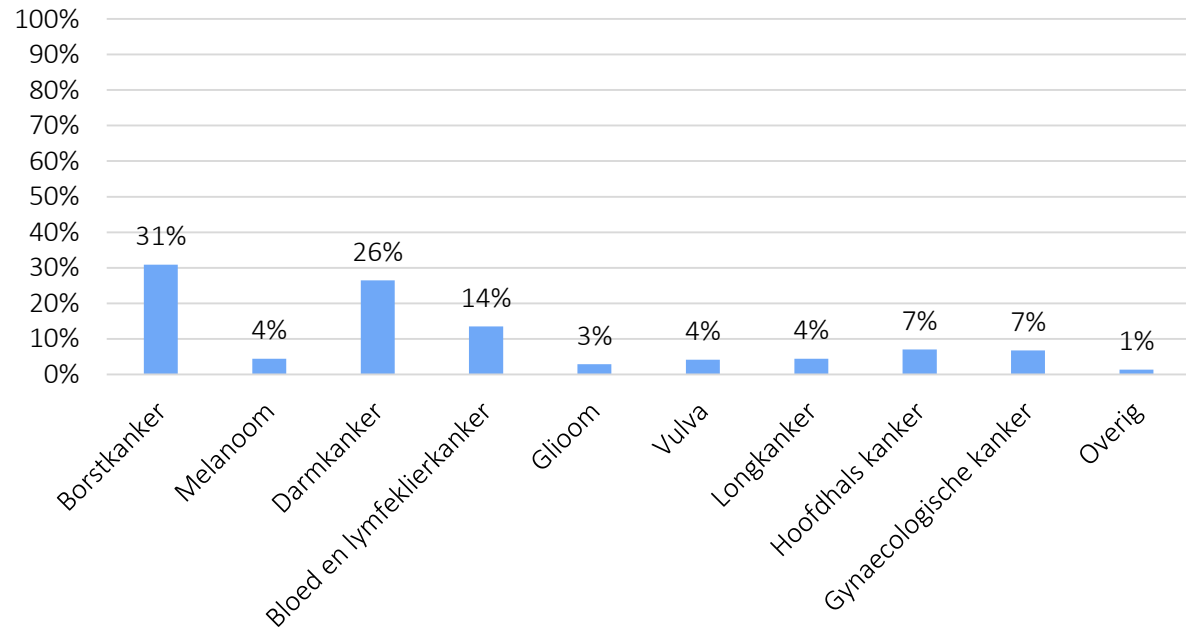
### Geslacht



### Leeftijd

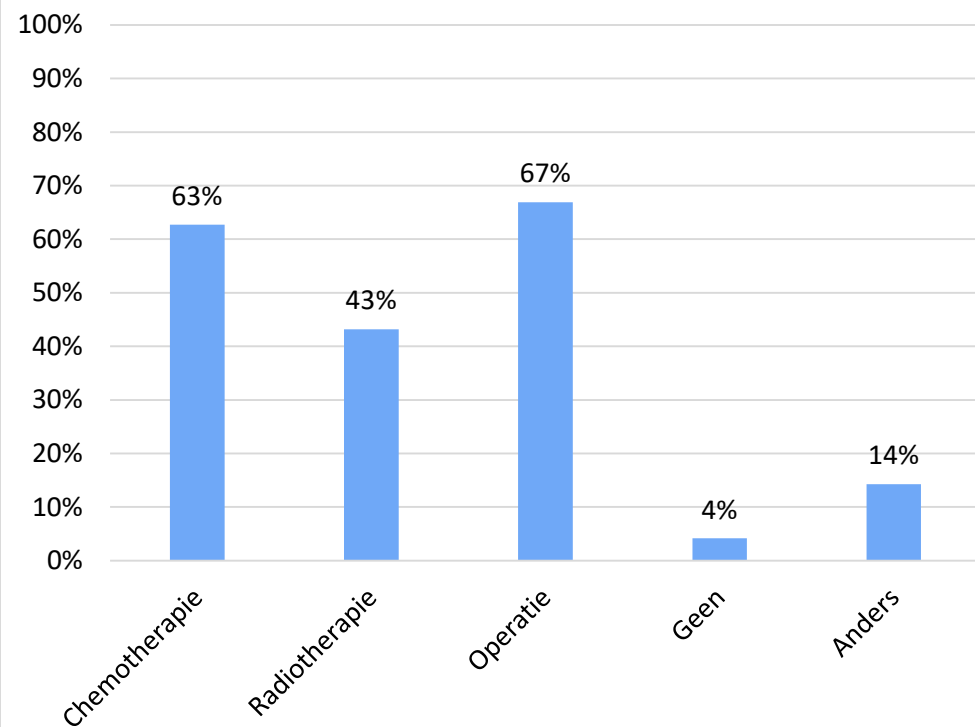


### Type kanker

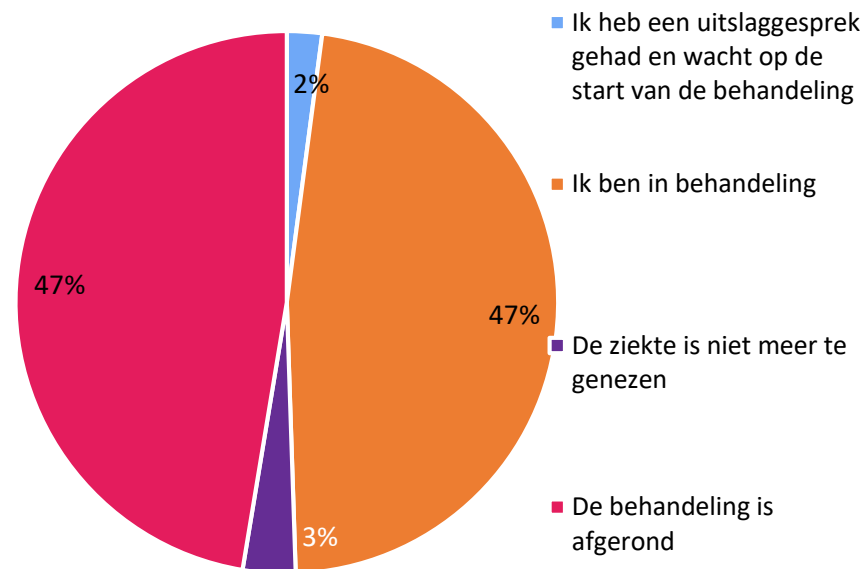


# Treatment type

## Type behandeling



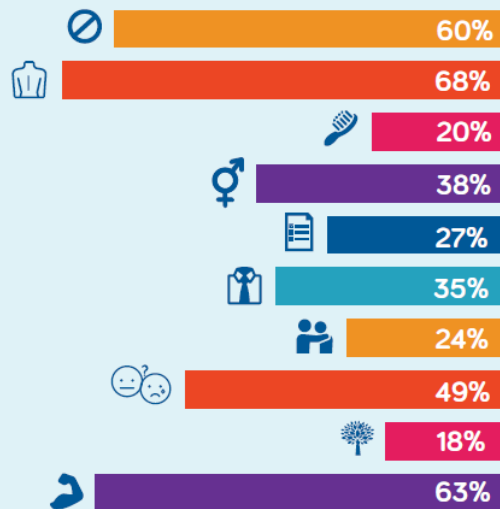
## Fase behandeling



# Reported problems ( N= 385)

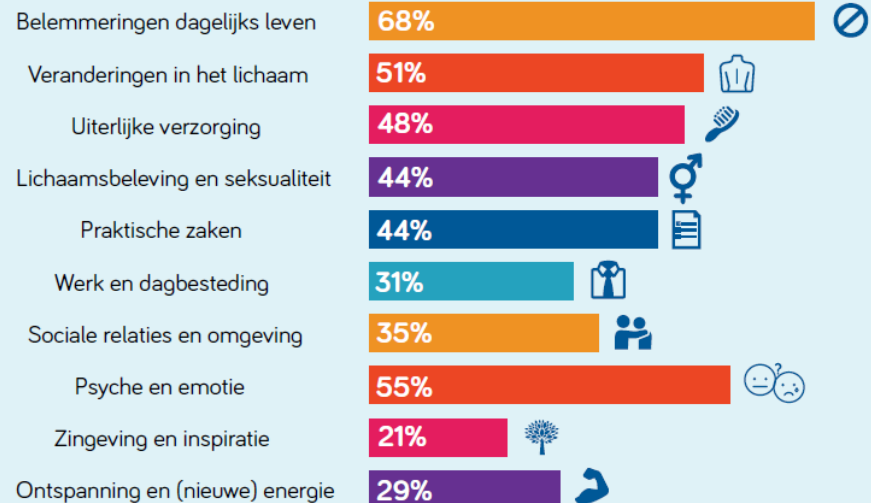
## Klachten en problemen

Heeft u nu of in het verleden klachten of problemen (gehad) als gevolg van de ziekte?



## Informatie

Heeft u informatie ontvangen over de volgende onderwerpen?



Belemmeringen dagelijks leven

Veranderingen in het lichaam

Uiterlijke verzorging

Lichaamsbeleving en seksualiteit

Praktische zaken

Werk en dagbesteding

Sociale relaties en omgeving

Psyche en emotie

Zingeving en inspiratie

Ontspanning en (nieuwe) energie



# Were patients screened?

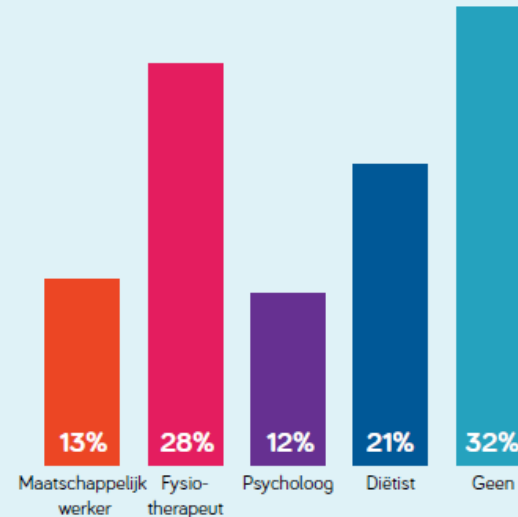
## Screenen

Heeft de arts of verpleegkundige u gevraagd om een vragenlijst in te vullen over uw klachten of problemen?

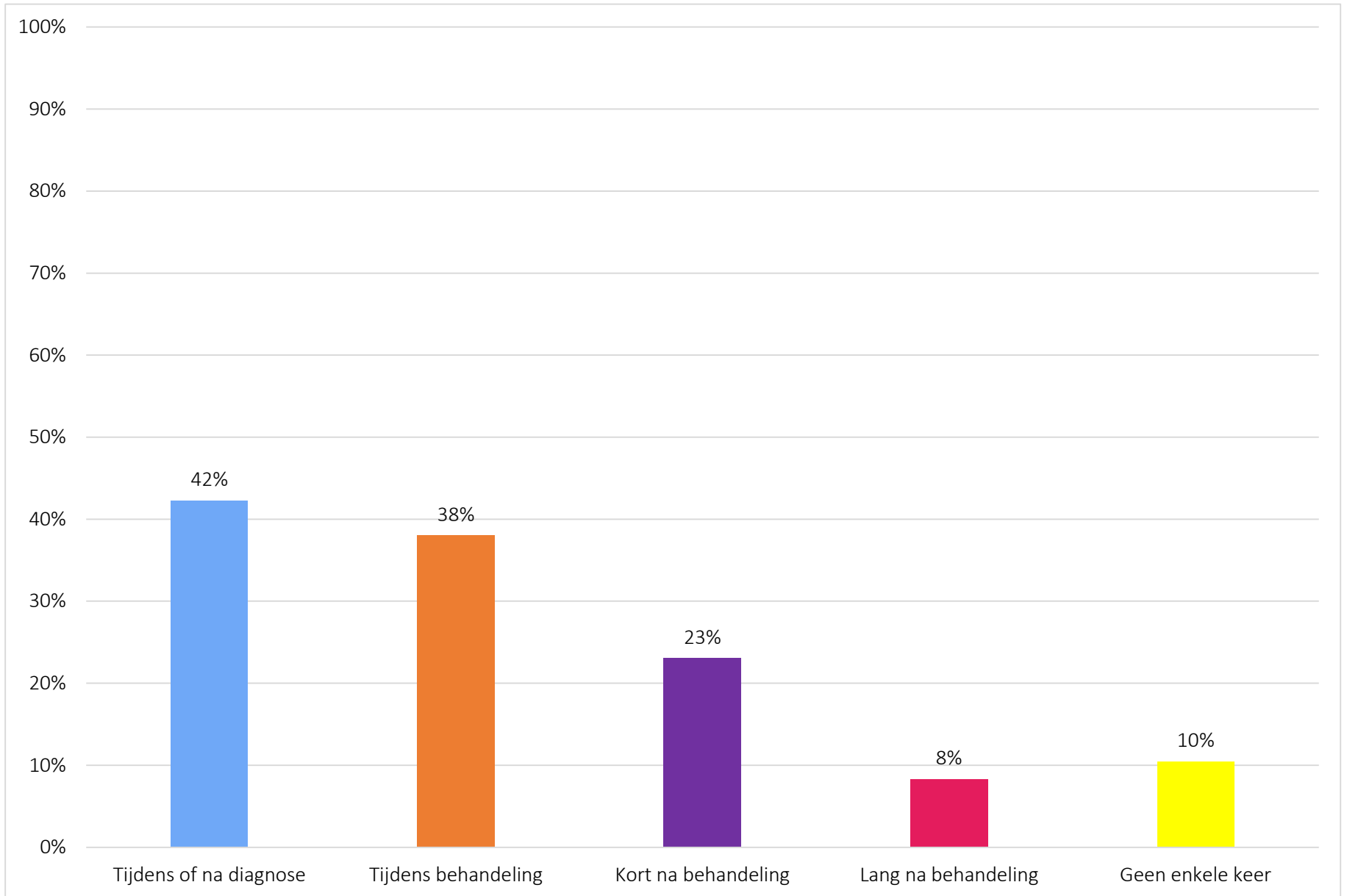


## Doorverwijzen

Doorverwijzing is vooral naar fysiotherapeut en diëtist.



# When were long-term symptoms discussed?



# Conclusions from QuickScans

## Information

- Patienten miss information on all levels with respect to participation

## Screening instrument “Lastmeter”

- Mandatory, but often not used.

## Referral

- Too little, too late

## Network

- Network/social map hardly known in hospital
- Limited cooperation with extramural care

# Social map always incomplete

- Possibilities for referral scarcely known.
- Barriers due to 1. (perceived) waiting lists 2. financial limitations
- No structural transmural cooperation



# Similarities stroke & cancer





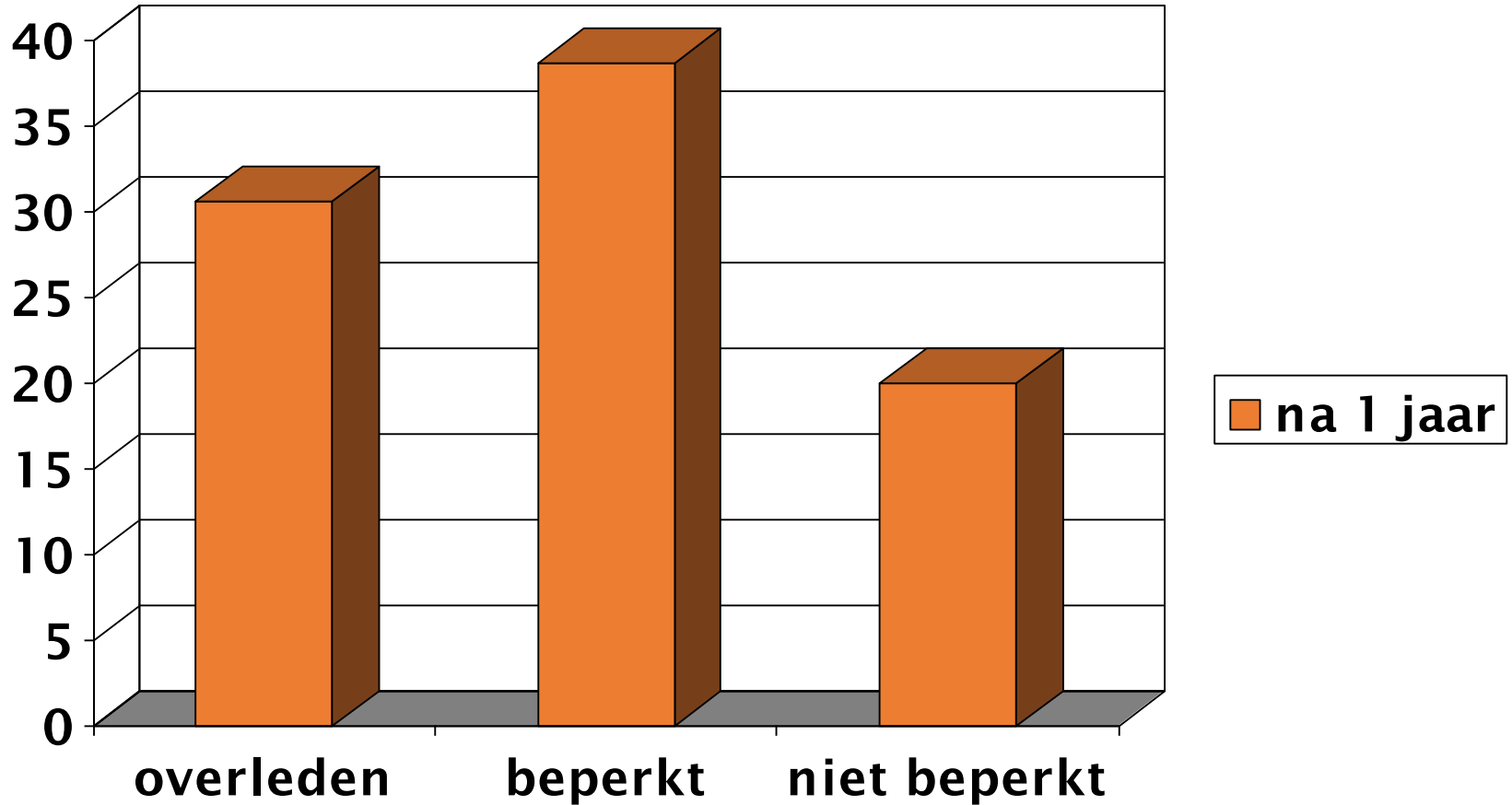




Tarceva/erlotinib      Taxotere/docetaxel      Avastin/bevacizumab  
 Taxol/paclitaxel      Ikyerb/lapatinib      **Nolvadex/tamoxifen**  
 Vidaza/5-azacitidine  
 Erbitux/cetuximab      **Tomudex/raltitrexed**      Lupron/leuprolide  
 Doxil/doxorubicin      Zoladex/goserelin      UFT/tegafur-uracil  
 Pharmorubicin/epirubicin      **Eloxatin/oxaliplatin**      Xeloda/capecitabine  
**Erivedge/vismodegib**      Alimta/pemetrexed  
 Leukeran/chlorambucil      Decapeptyl/triptorelin  
 Gemzar/gemcitabine  
**Paraplatin/carboplatin**      **Zelboraf/vemurafenib**  
 Rituxan/rituximab      **Temodar/temozolomide**  
 Myleran/busulphan      Glivec/imatinib      Herceptin/trastuzumab  
**Alkeran/melphalan**      Arimidex/anastrozole  
 Camptosar/irinotecan  
 Vectibix/panitumomab      **Zytiga/abiraterone**      Cisplatin  
 Velcade/bortezomib      Sprycel/dasatinib  
 Aromasin/exemestane      Iressa/gefitinib      Casodex/bicalutamide  
 Femara/letrozole  
 Afinitor/everolimus      Xalkori/crizotinib  
 Sutent/sunitinib

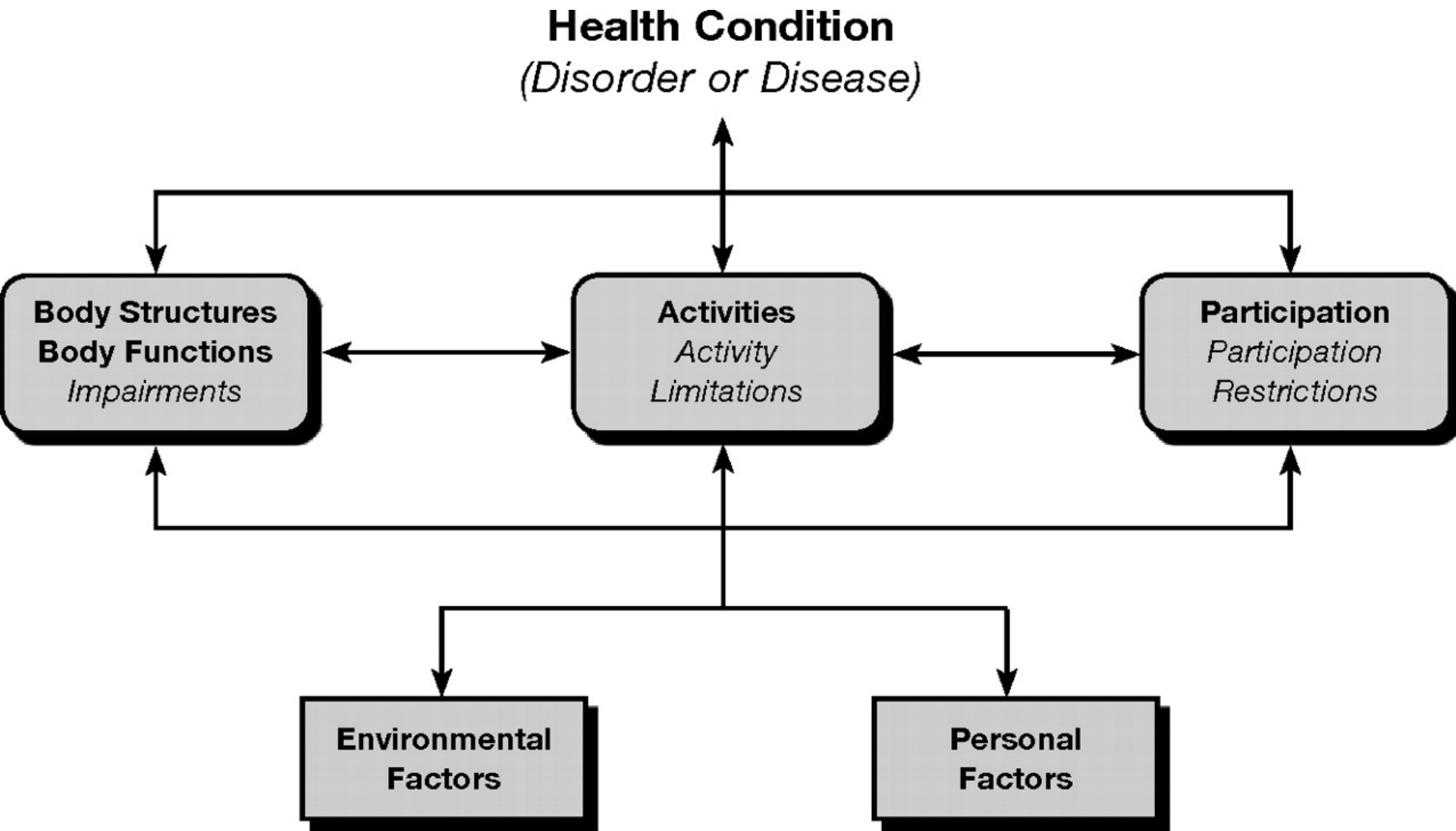


# Prognosis stroke & cancer





**Goal:** maximize autonomy & participation





CARTOONSTOCK.com

Search ID: mban170

“The surgery went well. It had spread, but I’m quite confident we got it all.”

# Cancer tsunami

- Life expectancy increasing
- Prevalence of (ex-) cancer patients
- Improved diagnostic & therapeutic facilities
- Increase of chronic symptoms & disabilities



# Clinical guidelines oncological rehabilitation (2018)

- Rehabilitation for all phases
- Systematic recognition symptoms & disabilities
- Tried & tested clinimetry
- Generic character i.e. for ALL cancer types

# Cancer related fatigue

- Is NOT related to physical exertion
- Is NOT alleviated by sleep or rest



## Cancer treatment burden

- Surgery
- Chemotherapy
- Radiation therapy
- Hormone therapy
- Other medications

## Direct cancer burden

# Cancer-related fatigue

## Cancer and treatment psychosocial burden

- Depression
- Anxiety
- Sleep disruption
- Pain
- Expectancy
- Self-efficacy
- Cognitive problems
- Relational problems
- Employment problems

## Comorbid conditions burden

- Anemia
- Deconditioning
- Skeletal muscle wasting
- Thyroid disease
- Cardiovascular disease
- Pulmonary disease
- Renal disease
- Malnutrition
- Infection

# Why is rehabilitation effective?



## Why Cancer Rehabilitation is an integral part of the treatment?

### Benefits:

- Build strength and endurance
- Reduces medical weakness
- Improves quality of life of patients
- Reduces stress
- Improves return to work
- Cancer treatment is more effective and well tolerated if rehabilitation care is well adopted before, during and after the treatment.



# Effect of rehabilitation

- Proven scientifically\*
- Positive effects on muscle strength, fatigue, and physical condition

\*Velthuis et al, Buffart et al





New Online

Views **1,169** | Citations **0** |  894

Original Investigation

ONLINE FIRST



March 2, 2017

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# Comparison of Pharmaceutical, Psychological, and Exercise Treatments for Cancer-Related Fatigue

## A Meta-analysis

Karen M. Mustian, PhD, MPH<sup>1</sup>; Catherine M. Alfano, PhD<sup>2</sup>; Charles Heckler, PhD, MS<sup>1</sup>; [et al](#)[» Author Affiliations](#)*JAMA Oncol.* Published online March 2, 2017. doi:10.1001/jamaoncol.2016.6914Full  
Text

### Key Points

**Question** Which of the 4 most commonly recommended treatments for cancer-related-fatigue—exercise, psychological, the combination of exercise and psychological, and pharmaceutical—is the most effective?

**Findings** This meta-analysis of 113 unique studies (11 525 unique participants) found that exercise and psychological interventions and the combination of both reduce cancer-related fatigue during and after cancer treatment. Reduction was not due to time, attention, or education. In contrast, pharmaceutical interventions do not improve cancer-related fatigue to the same magnitude.

**Meaning** Clinicians should prescribe exercise and/or psychological interventions as first-line treatments for cancer-related fatigue.

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### You May Also Like

#### Research

Investigation of 2 Types of Acupressure for Cancer-Related Fatigue in Breast Cancer: A Randomized Clinical Trial

#### Opinion

Highlights of Recent Studies on Non-Small Cell Lung Cancer

#### Research

Prognostic and Predictive Value of Primary Tumor Location in RAS Wild-Type Metastatic Cancer: Retrospective Analysis of TAL and FIRE-3 Trials

# Results rehabilitation Zeeland (n=163)

	Beginscore	Eindscore	P-waarde (T-toets)
Stemming	15.3	12.2	0.000
Fysieke vermoeidheid	14.3	10.7	0.000
Rol functioneren	52.8	70.1	0.000
Cognitief functioneren	66.7	70.8	0.009
Diarree/obstipatie	9.5	7.8	0.231
Financiële problemen	11.0	12.3	0.348

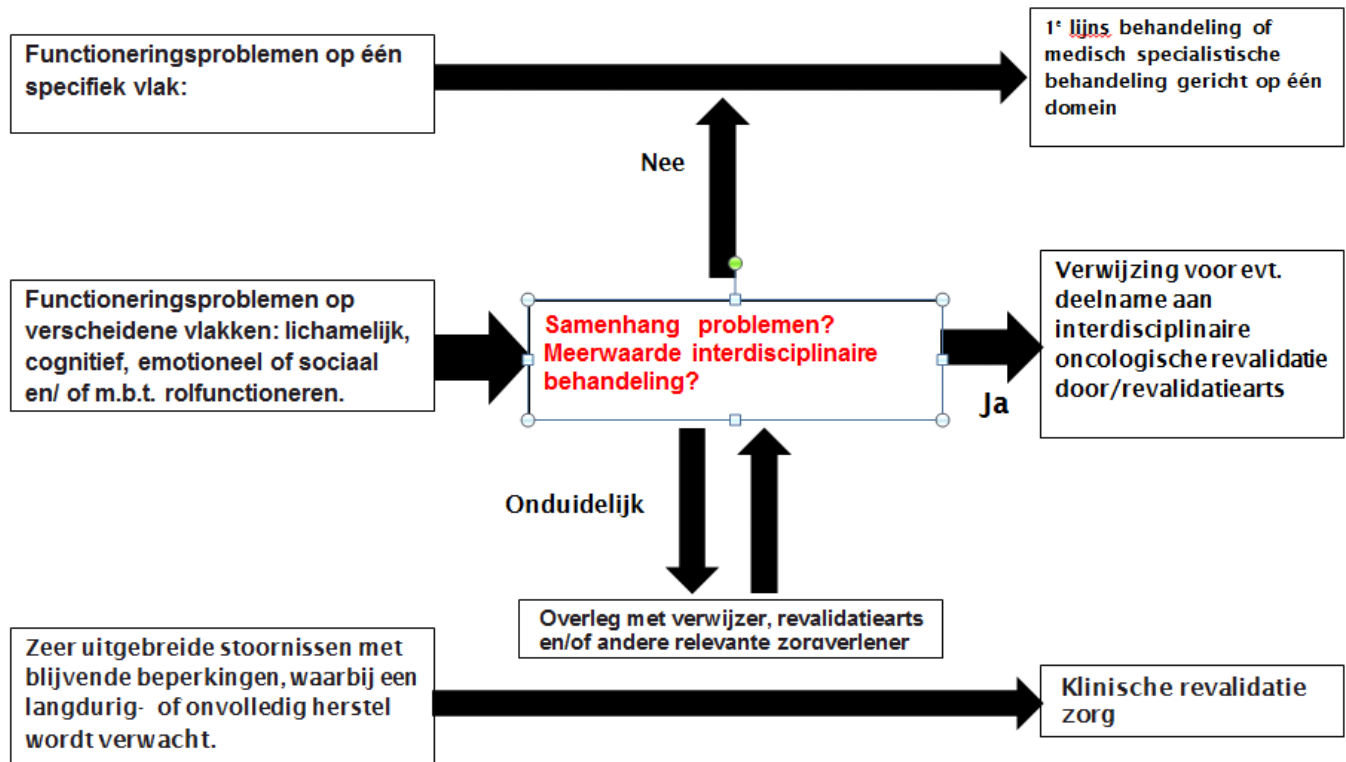
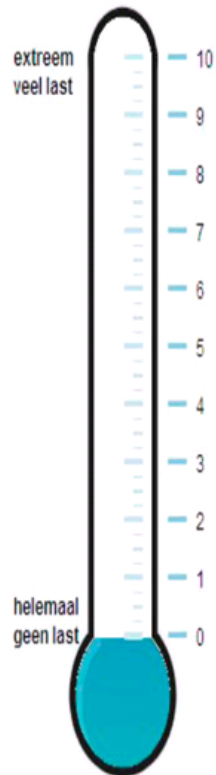
# Complex rehabilitation – for whom?

- 2 or more problems in daily functioning that are inter-related
- During and after curative treatment
- In the palliative phase
- Sufficient condition

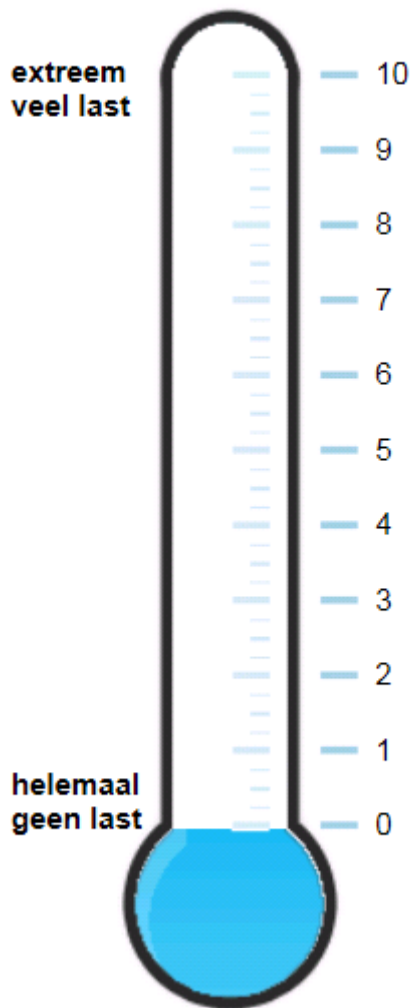


# Model for referral

Thermometer



# Thermometer



# Probleemlijst

## ✓ Praktische problemen

- | Ja                    | Nee                   |                        |
|-----------------------|-----------------------|------------------------|
| <input type="radio"/> | <input type="radio"/> | zorg voor kinderen     |
| <input type="radio"/> | <input type="radio"/> | wonen / huisvestiging  |
| <input type="radio"/> | <input type="radio"/> | huishouden             |
| <input type="radio"/> | <input type="radio"/> | vervoer                |
| <input type="radio"/> | <input type="radio"/> | werk / school / studie |
| <input type="radio"/> | <input type="radio"/> | financiën              |
| <input type="radio"/> | <input type="radio"/> | verzekering            |

## > Gezins- sociale problemen

## > Emotionele problemen

## > Religieuze/spirituele problemen

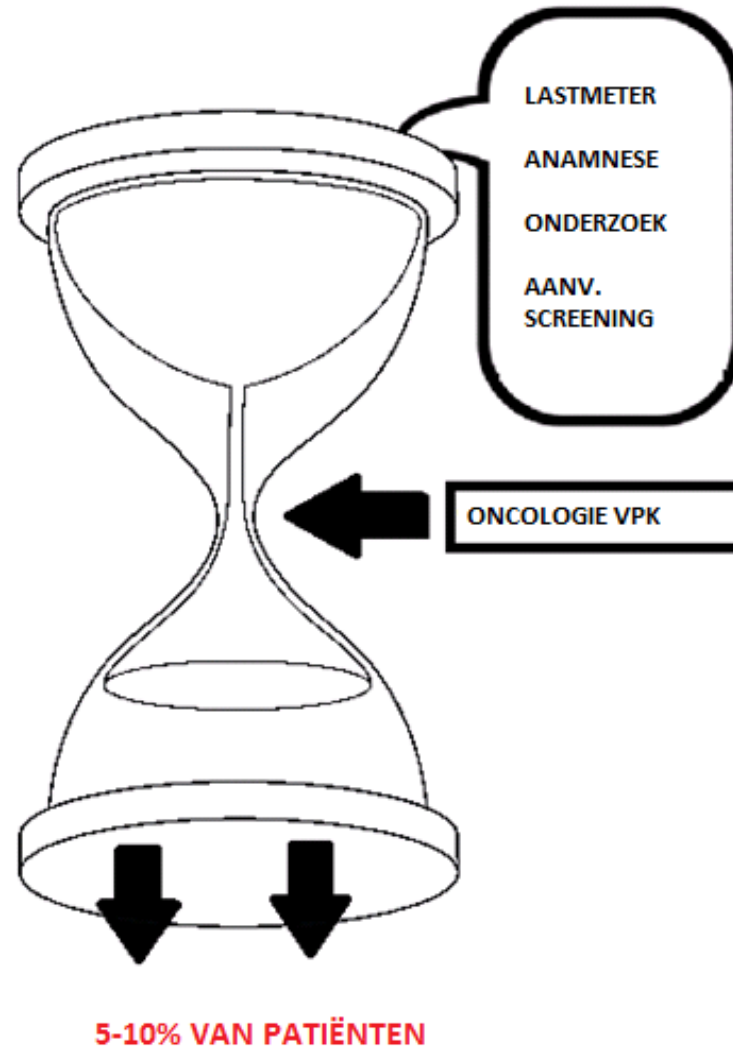
## > Lichamelijke problemen

## > Andere problemen, vul deze hieronder in

## > Zou u met een deskundige willen praten over uw problemen?

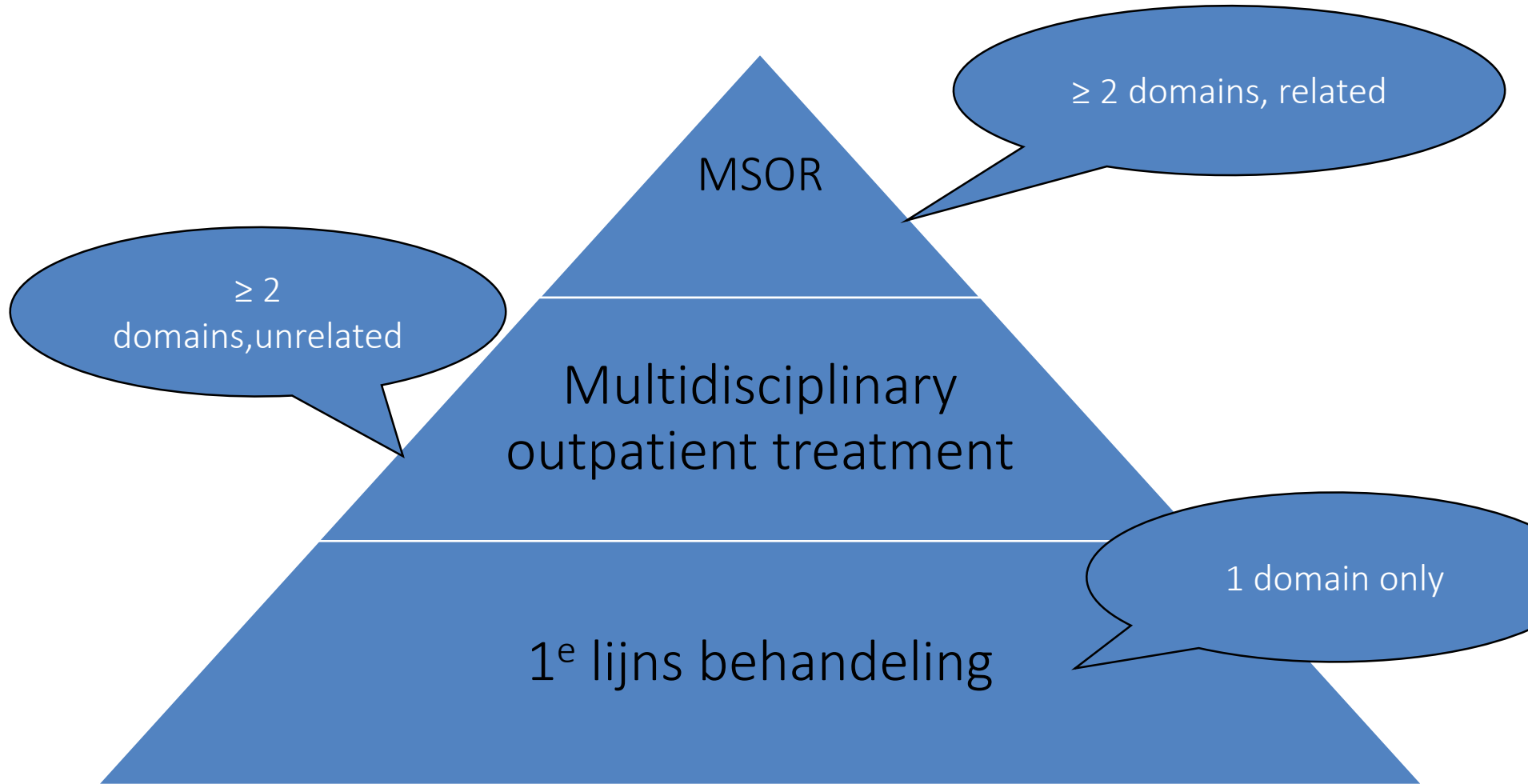
## > Algemeen

# How to get the right patients





# Matched care



# Long term goal

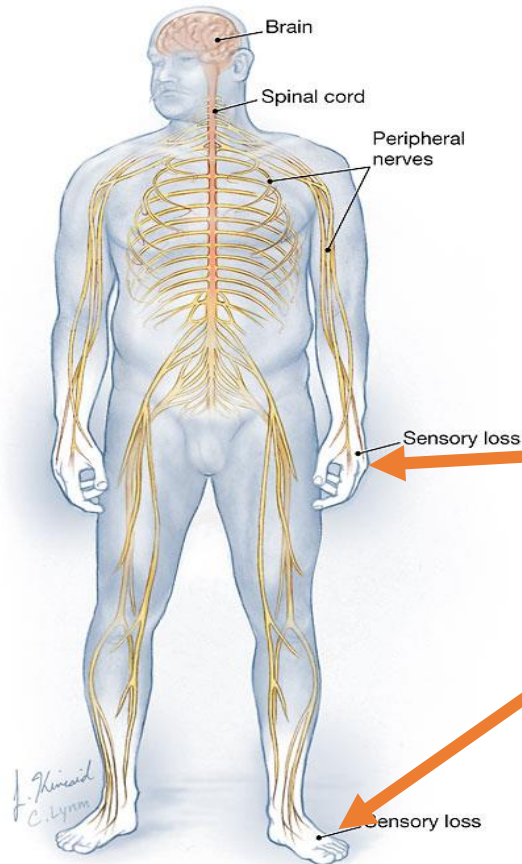
- Same opportunities for every patient
- National ONCONET



# Complications of treatment



Pattern of sensory loss (white areas) in peripheral neuropathy



**neuropathie**



# Hand-foot syndrome





# Side effects chemotherapy

“Mild”:

- fatigue
- Hair loss
- Nausea
- Skin problems
- Mucosa
- Diarrhoea
- Poor intake
- Neuropathy

The bad news is chemo can kill you before the cancer does. The good news is the medical bills and health insurance can kill you before the chemo.

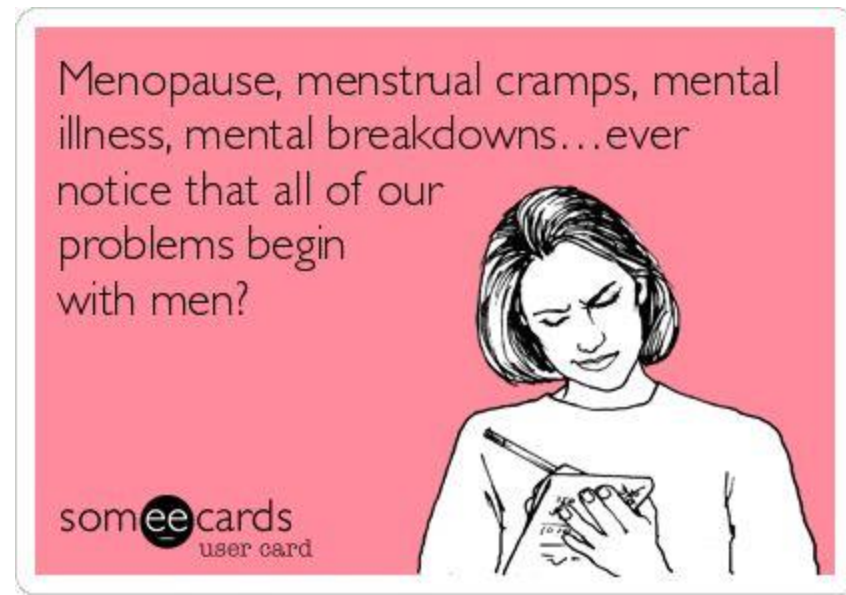
Severe:

- Bleedings
- Anemia
- Infections
- Cognitive defects



# Anti-hormonal treatment

- Before menopause: acute debut
- After menopause: exacerbation pre-existent symptoms



# Side effects anti-hormonal therapy

- Tamoxifen:

1. Stop menstruation
2. flushes
3. Weight gain
4. Hair thinner
5. Joint stiffness / pain
6. Behavior, memory
7. “Old lady”

- Aromatase blocker:

1. Mostly milder
2. Flushes
3. Nausea, poor intake
4. Joint stiffness



“Oestrogen is the lubrication fluid for your whole body”\*



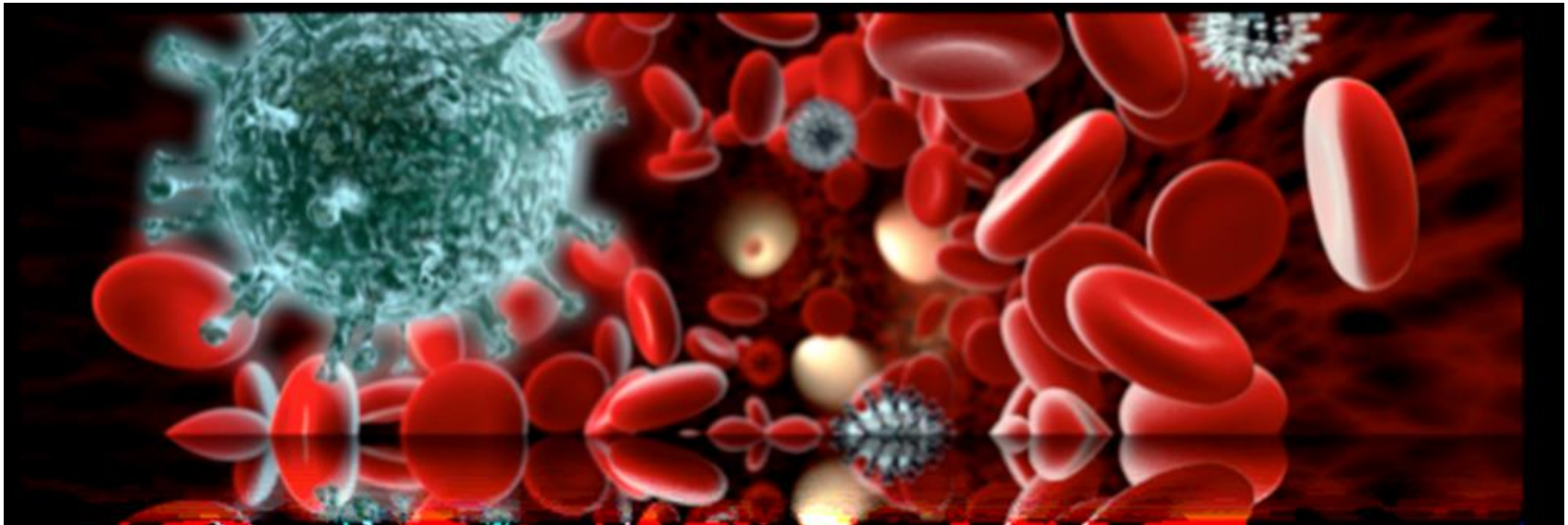
\*Film by Meral Uslu: “mijn kanker” (2015)

## Symptoms Experienced Most During Menopause

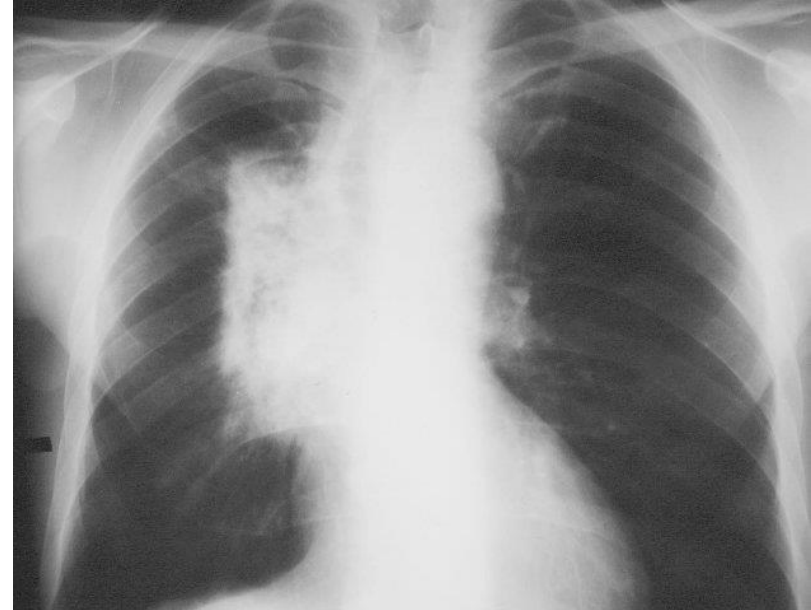


# Immune therapy

- All kinds of side effects
- Interindividual sensitivity different
- Infamous: cardiac output (Herceptin)



# Radiotherapy



- Fatigue, malaise
- Hair, skin, mucous membranes
- Bone: radionecrosis
- Soft tissues: fibrosis, frozen shoulder
- Gastro-intestinal: diarrhoea, swallowing, saliva
- Infertility
- Brain: cognitieve klachten
- Prostate - & bladder

# Radiation-dermatitis

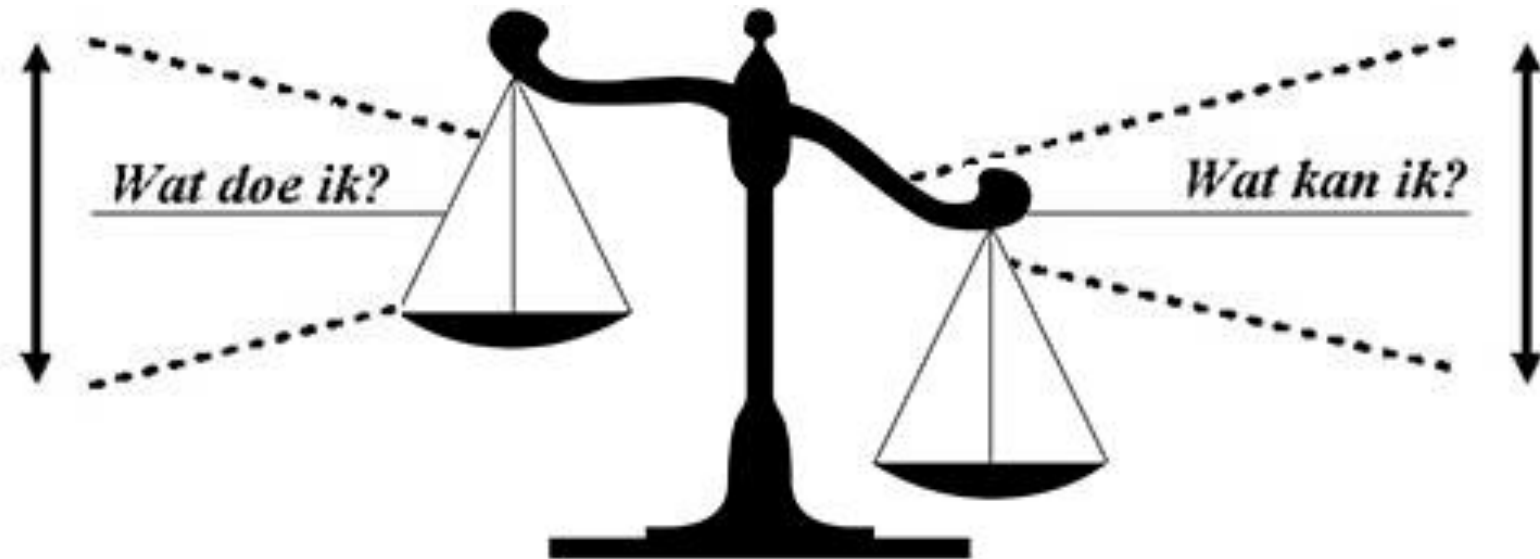




# Hyperbaric oxygen therapy

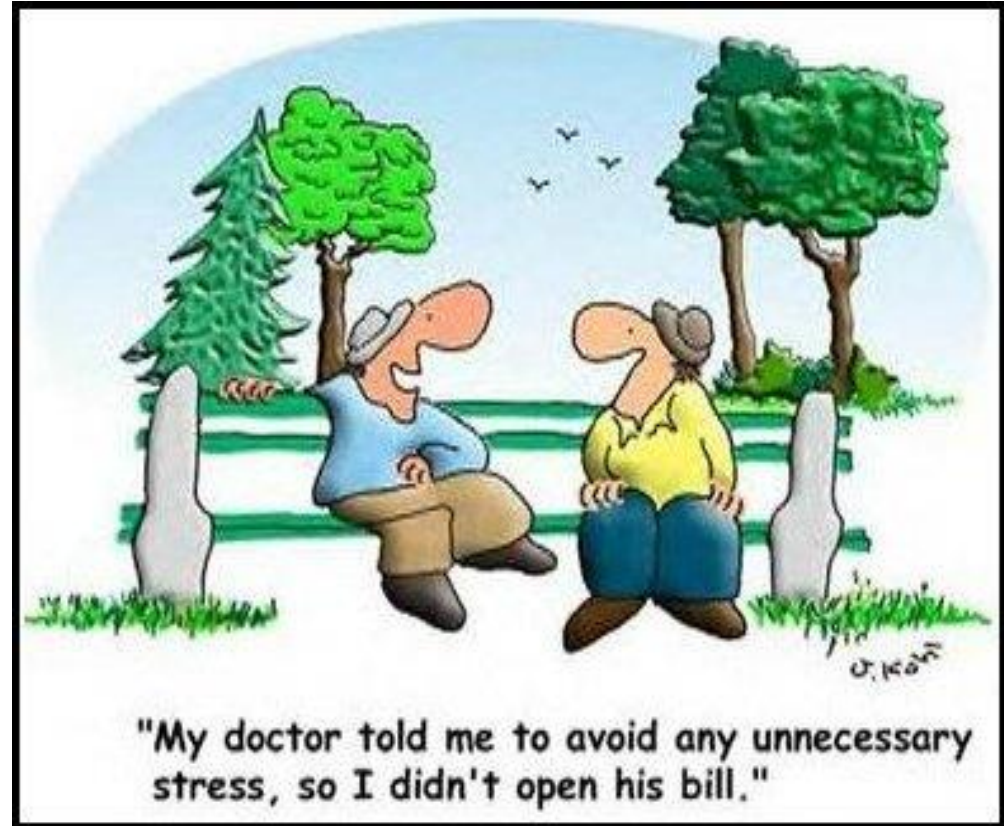


# Balance in activities



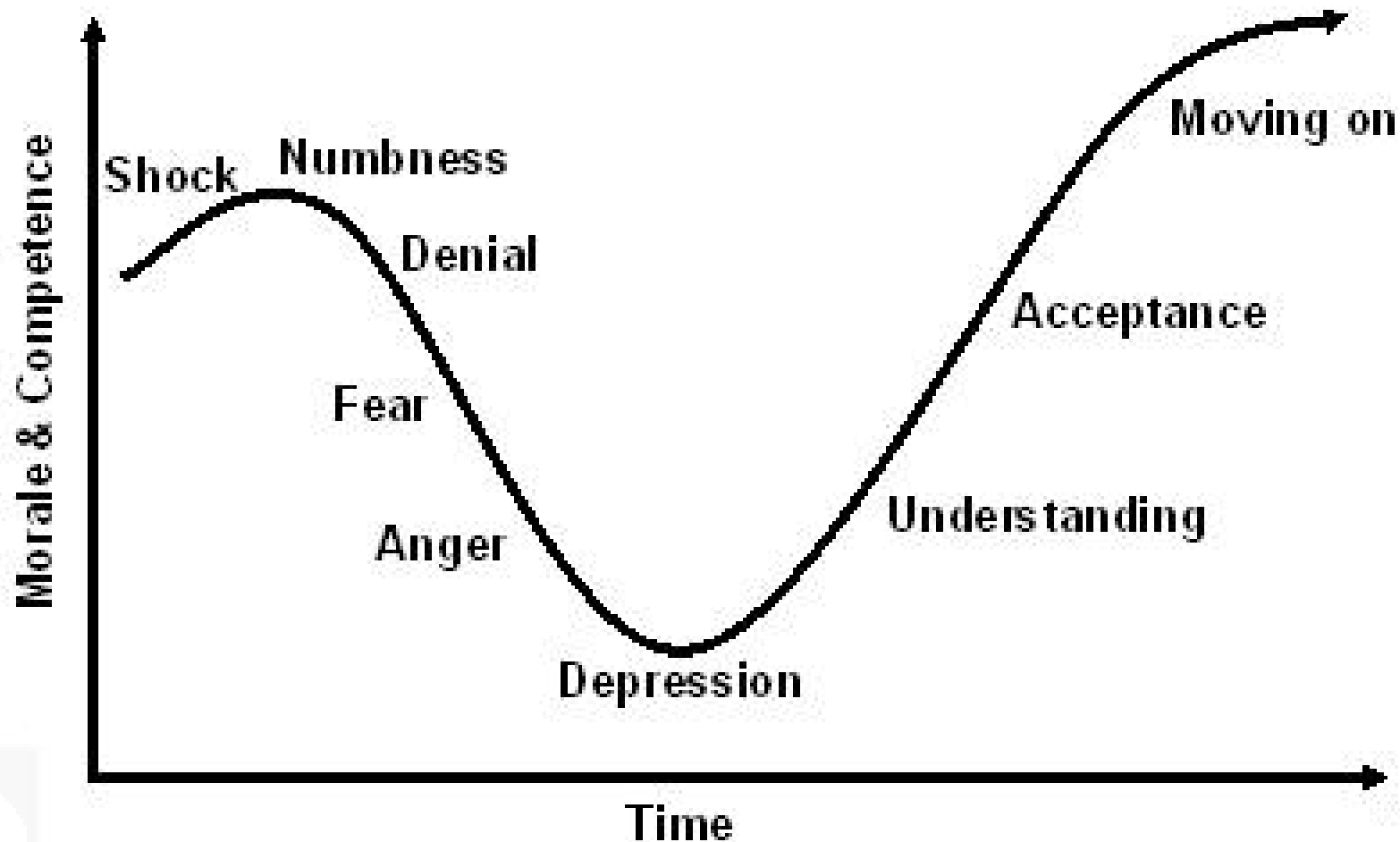
# Psychological issues

- Anger
- Fear
- Insecurity
- Depression



# Understanding Change

## Kubler Ross Change Curve



# Loss of confidence

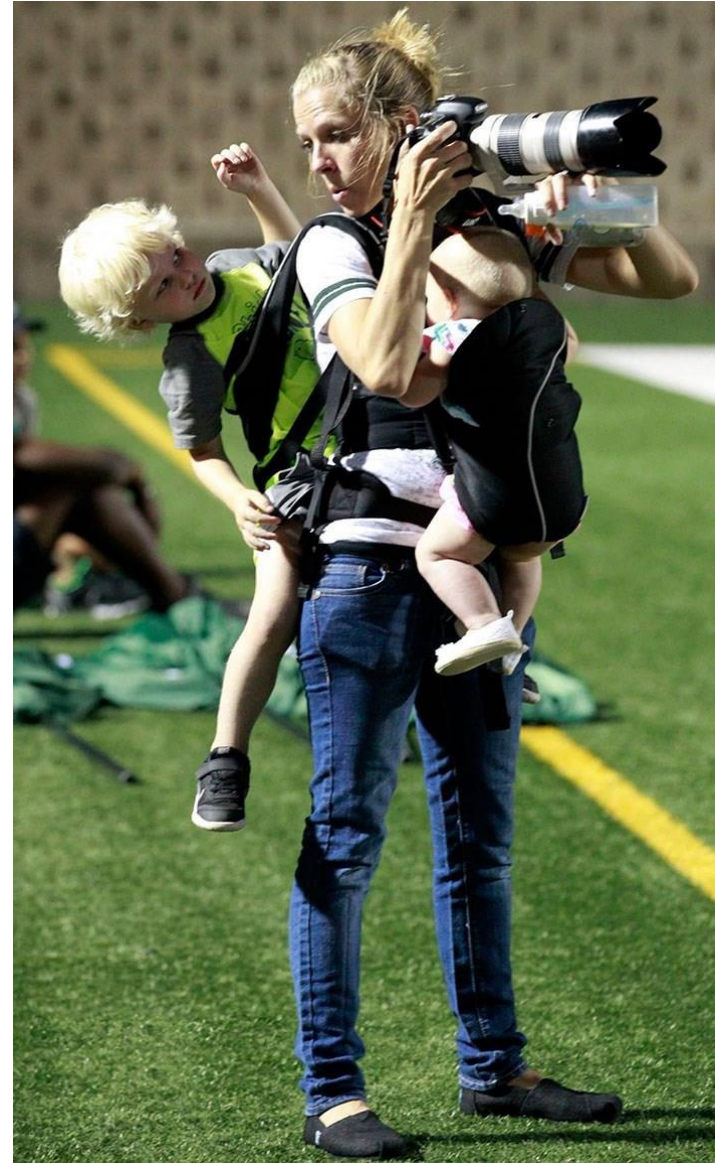
- “Ik kom niet uit dat gat”
- “Zwaard van Damocles”
- “Ik vertrouw mijn lijf niet meer”
- “Nergens puf voor”
- “Krijg de draad maar niet opgepikt...”





# Social aspects

- Family role
- Occupation
- Financial
- Mobility
- Sex & intimacy
- Hobby's



# Cognitive deficits

- “Everything used to go automatically, now everything takes exertion”





# “Chemobrain” - what factors influence cognitive function- 1?

- Cognition multifactorial : careful with the term “chemobrain”
- Direct neurotoxicity has been proven: MRI/ SPECT: detectable changes
- “Accelerated aging hypothesis” – cancer can cause DNA damage
- Enormous interindividual variation: genetic factors?
- Radiotherapy & anti-hormonal therapy may have additional effect

# “Chemobrain” - what factors influence cognitive function - 2?

- Role fear, depression, stress, and sleep deprivation
- Other pharmacotherapy e.g. benzodiazepines
- Poor nutrition
- InactivityLack of cognitive reserves (e.g. low education)
- Chronic social isolation and stress



PTSD ?



**E**ye  
**M**ovement  
**D**esensitization &  
**R**eprocessing

# Most common problems

- Memory
- Attention
- Concentration
- Organisation & planning
- Executive
- Finding words



# Treatment options

- Pharmacotherapy: EPO, methylphenidate, Modafinil, Donepezil, Fluoxetine
- Cognitive rehabilitation (psycho-education, compensation strategies)
- Adapting work circumstances
- Sleep & sufficient physical activity
  
- Psychosocial Intervention
- Identifying & handling distress
- Support groups: recognition very important
- Stay physically active

Research into protective pharmacotherapy before chemotherapy (fluoxetine)

# What can the patient do?

- Structure life
- A smartphone – [revalidatieapps.nl](http://revalidatieapps.nl)
- Rest & sleep
- Nutrition
- Daily physical exercises
- Involve family & carers
- Focus on one task at a time



# How can we contribute?

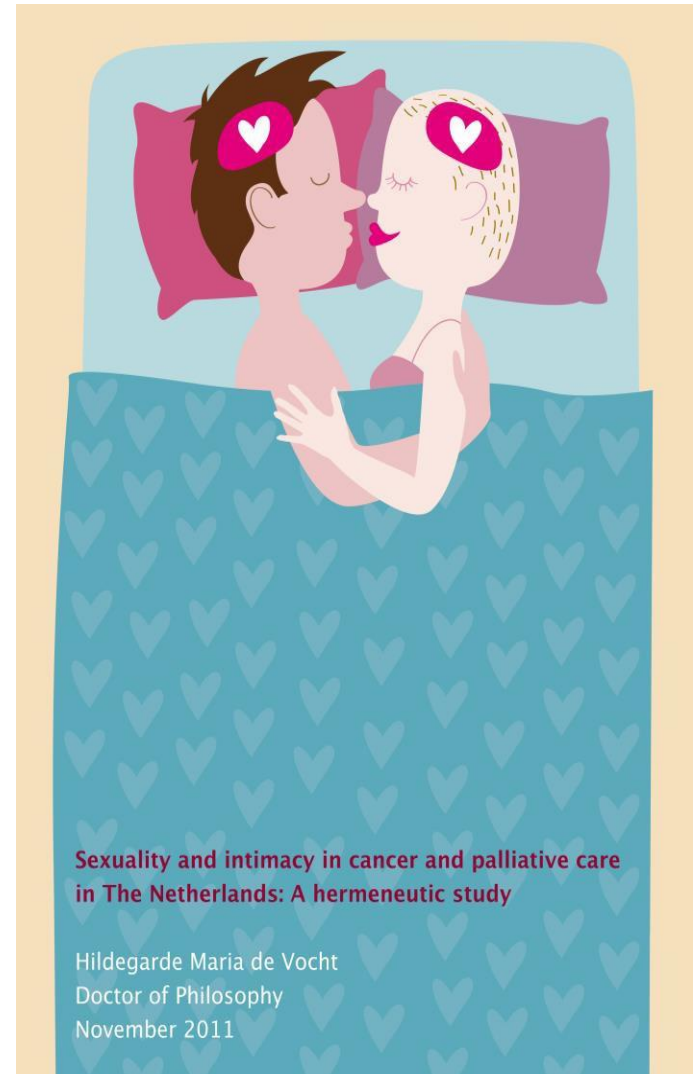
- Objective vs. subjective cognitive problems
- Treat co-morbidity, e.g. depression
- Evaluate pharmacotherapy e.g. sleeping pills
- Psycho-education
- Optimize social support
- Computer-based cognitive training
- Yoga, mindfulness-based interventions



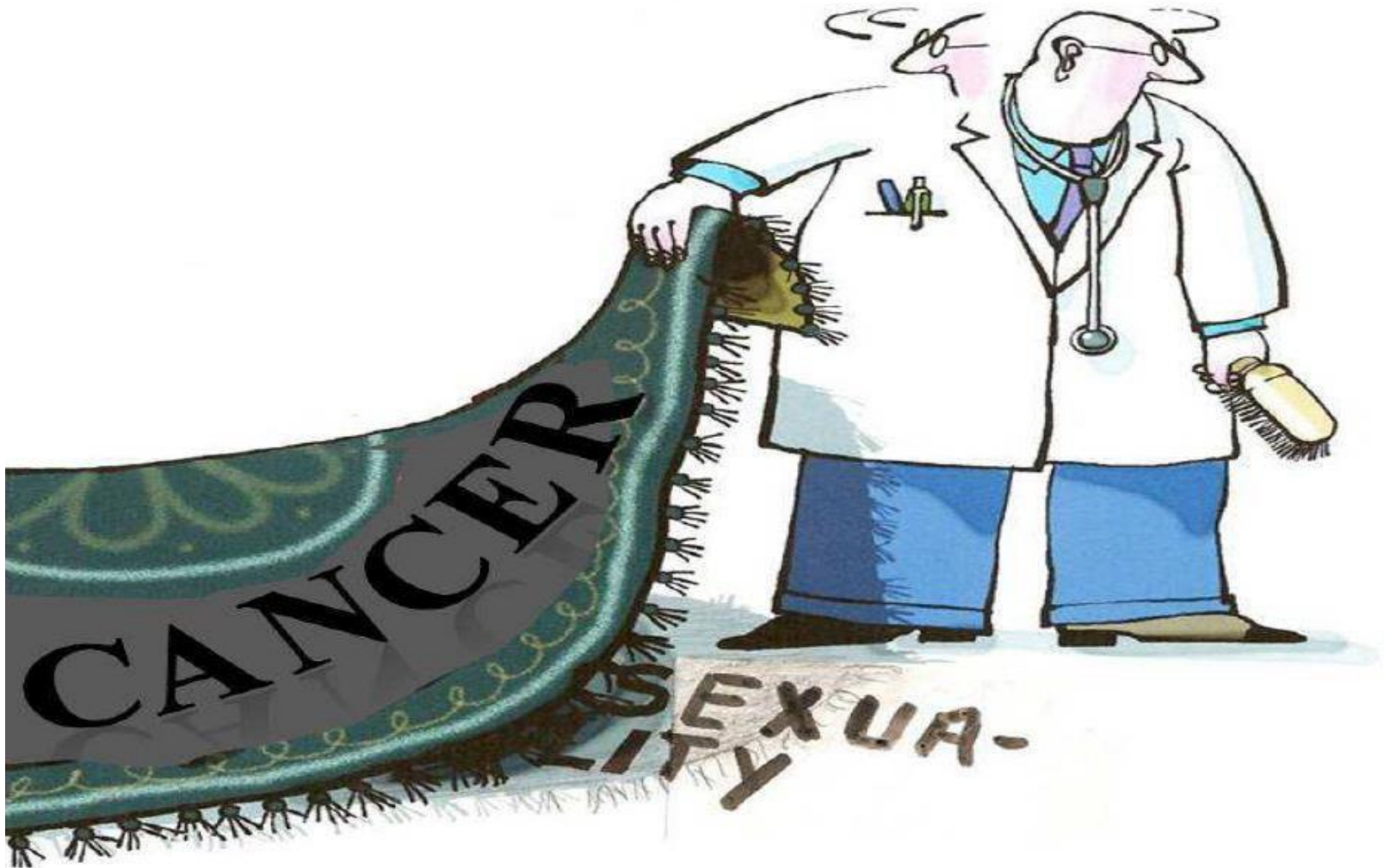
# Sex & en intimacy

## Very common 'late consequence'

- Fatigue (68%)
- Poor condition (54%)
- Sexual issues (44%)
- Concentration problems (40%)
- Memory deficits (37%)



7-8% of adult population will have to deal with sex after cancer



# What are the challenges?

- Professionals find it hard to find the right “tone”
- The impact is large
- Communication: patients find it difficult to “lay it on the table”

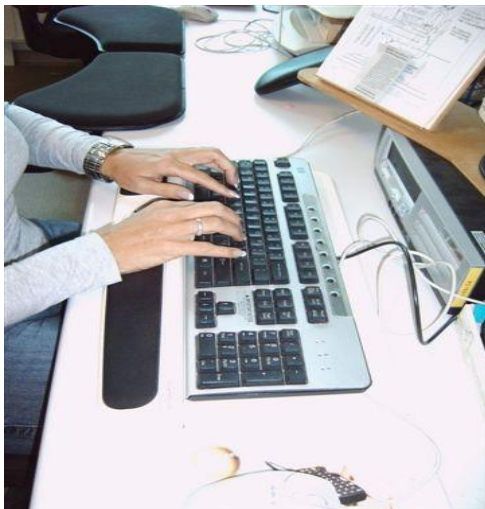


# sexual identity





# Return to work





# Cancer and (return to) work: sobering facts

- Per annum in Netherlands: 40.000
- Temporary contract: frequently terminated
- 25 % is fired
- Risk of joblessness is 40% higher

# Factors hampering RTW \*

- Fatigue: almost 100%
- Cognitive deficits
- Neuropathy
- Psychosocial problems
- Pain

*\*NVAB richtlijn kanker & werk 2017)*

# Positive aspects of RTW

- Speedier functional recovery
- Higher self-esteem
- (Macro)-economic aspects

**RETURN  
TO WORK**



# External factors influencing RTW

- Lack of knowledge about cancer with stakeholders
- Difficult subject, often skirted



# Cochrane review (2015) - any succesful interventions?

- Yes – interdisciplinary interventions covering all ICF domains
- No – (well, until 2015): all others – monodisciplinary medical, psychological and fysical interventions





# Recent Dutch studies

- PACES study (van Waart et al, 2015) – physical training in early stage – breast cancer RTW 89% vs. 61% 6 months after chemotherapy
- REACT study (Kampshoff et al, 2015): high & low intensive training programmes (12W) led to significantly less reported “problems at work”
- Both studies: early intervention

# RTW – positive prognostic factors

- Positive social support
- Medical factors e.g. testicular vs. renal cancer
- Autonomy at work
- “climate” at work
- Attitude of manager & others involved in RTW



# RTW – negative prognostic factors

- Higher age
- Lower education
- No partner
- Medical factors e.g. head/neck tumors, excessive chemotherapy, depression, pain, cognitive factors
- Work related: stress, high workload, physically arduous work



# Back to our patient

- Multiple problems
- Years of stagnation
- Cognitive problems impeding work
- Neuropathy
- Interdisciplinary rehabilitation for 5 months



# Interdisciplinary treatment

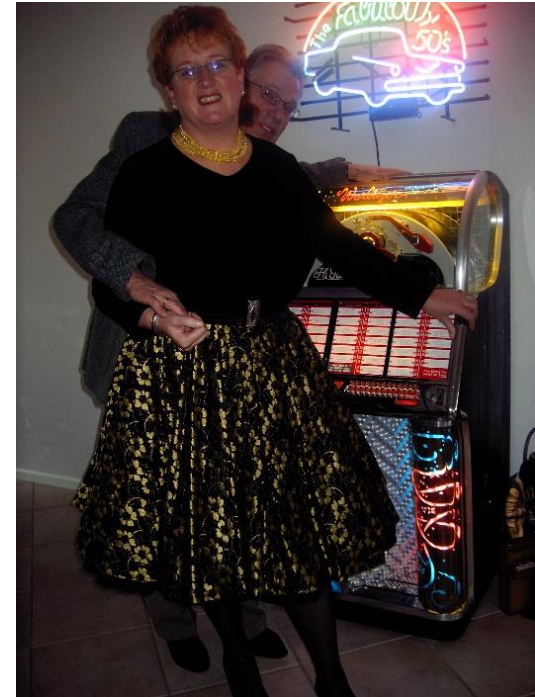
- Fysiotherapist
- Occupational therapist
- Sports- & activity coördinator
- Social worker
- Dietician
- Psychologist
- Medical supervision: consultant P M & R





# Results

- MFI: significantly less fatigue
- EORTC QLQ C 30: significantly improved participation
- (partial) return to work
- TENS: no more pain
- Can make trips again with partner
- Ready to Rock 'n Roll!





# Development of a web-based application

- [Keuzehulp Kankerrevalidatie](#)



# Costs (Netherlands)

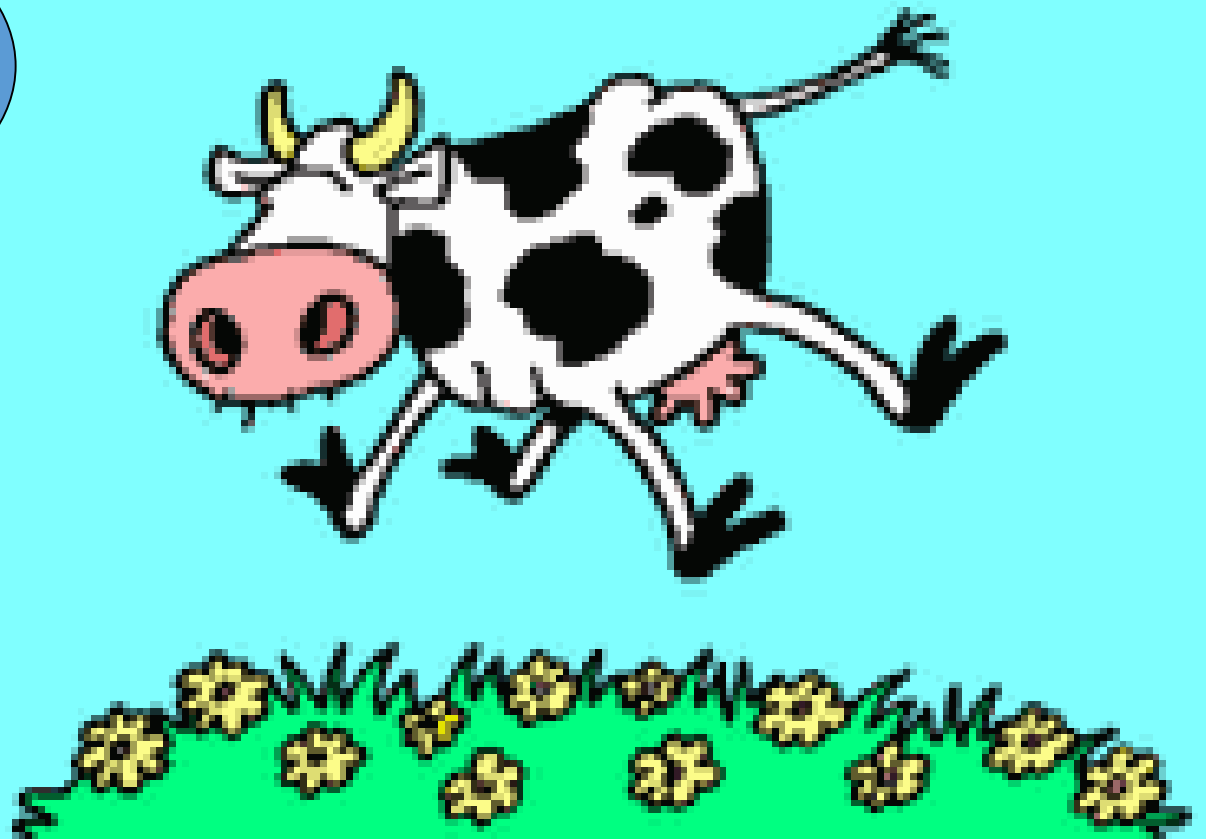
- Costs rehab (2014) € 3.200
- Nivolumab for melanoma € 60.000



# In conclusion..

- Oncological rehabilitation is no luxury (& probably very cost-effective)
- Return to participation, including work, severely hampered by cognitive deficits
- It is important to address disabilities in an early phase & start rehabilitation ASAP
- Rehabilitation, intra - & extramural should be available for every individual

Thank you  
so much!



# Leessuggesties

- IKNL richtlijn oncologische revalidatie (2017)
- Richtlijn kanker en werk (NVAB, 2017)

