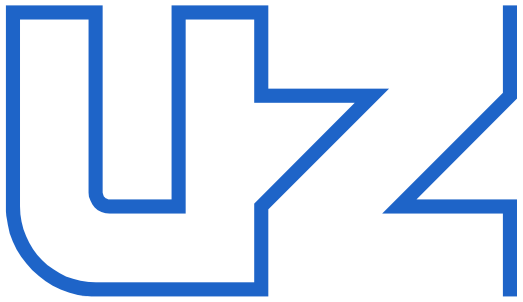

UZ
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Glenn Vergauwen

# Impact van hormonale therapie in de oncologie bij de behandeling van het mammacarcinoom

## Alumni Voorjaarscolloquium 2023

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# Introductie

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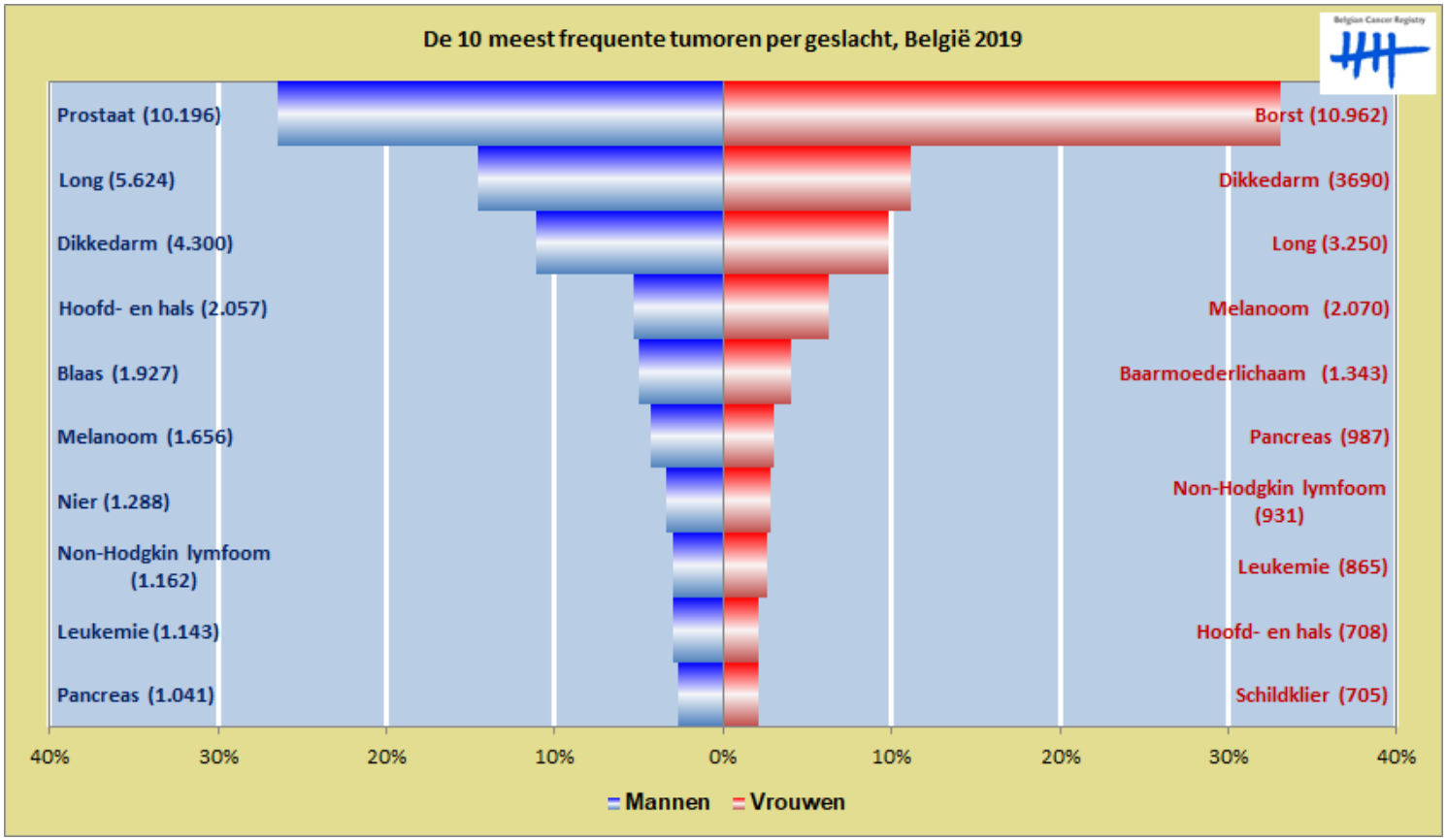
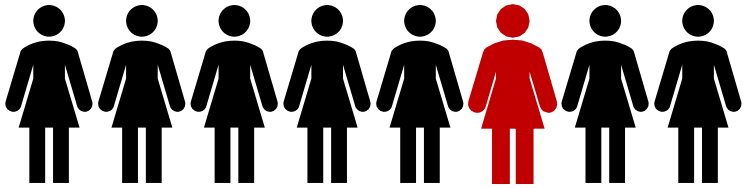
# Borstkanker in cijfers

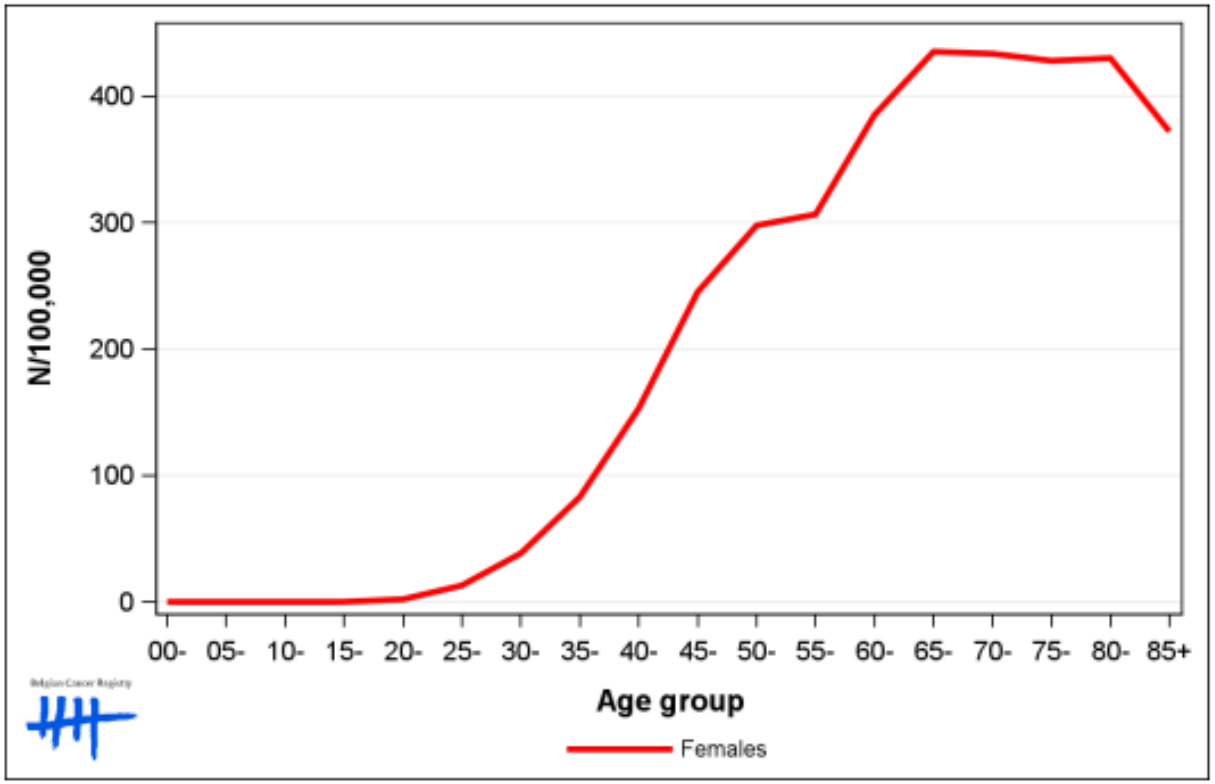



*Kankerregister, 2019*

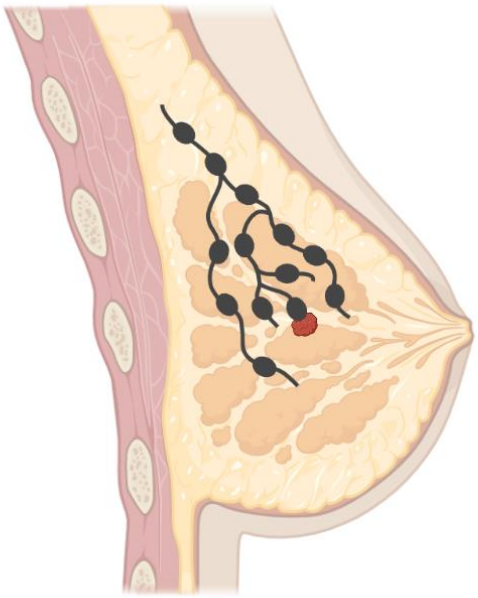
# Borstkanker in cijfers



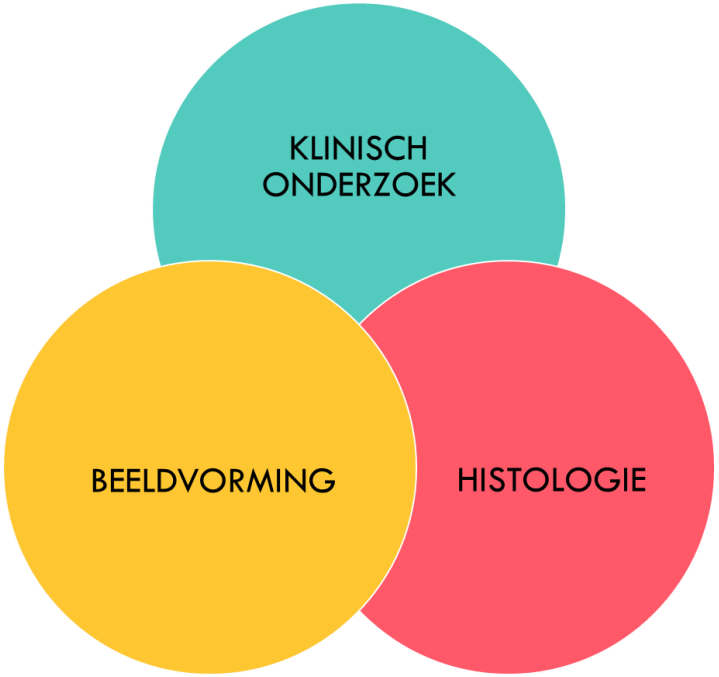
*Jaarlijks ±100 mannen in België*

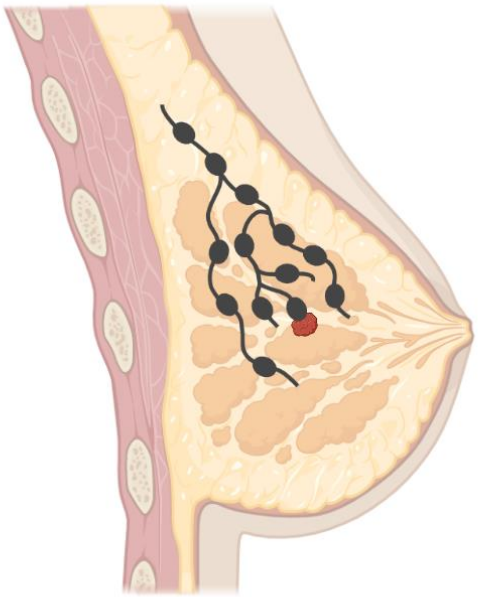



*Leeftijdsspecifieke incidentie, Kankerregister, 2015-2019*



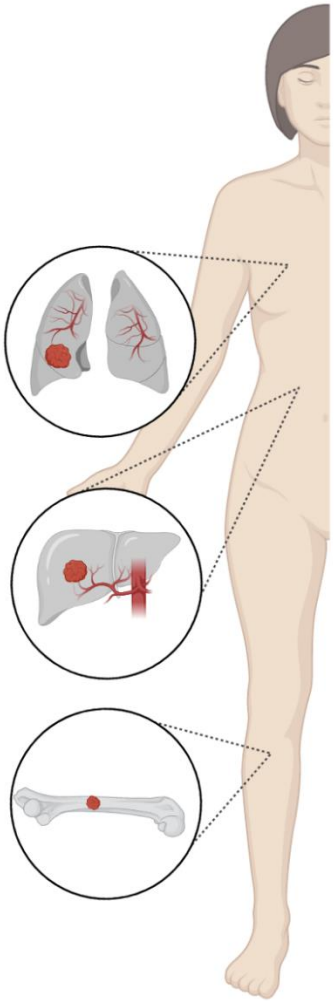
Diagnose borstkanker





Diagnose borstkanker

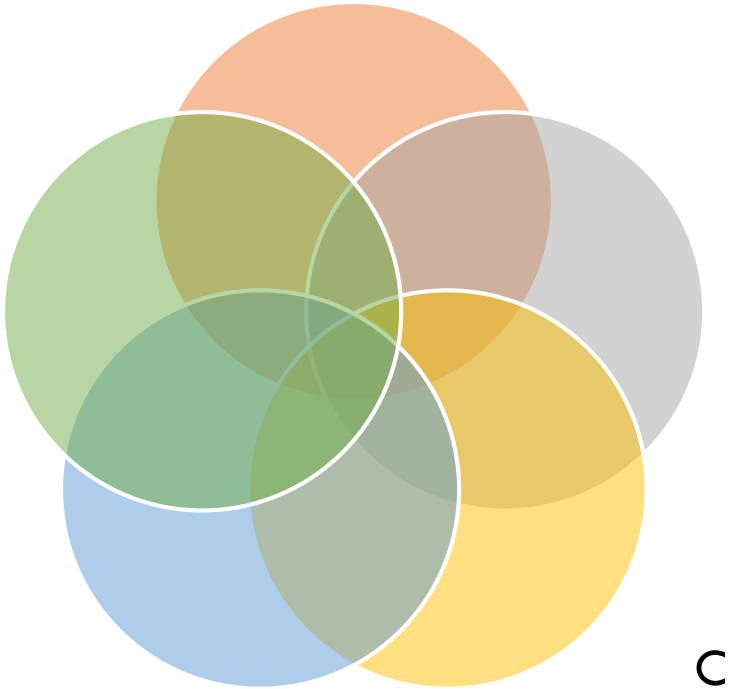
Staging



Behandeling

HEELKUNDE

ANTI-
HORMONALE
THERAPIE



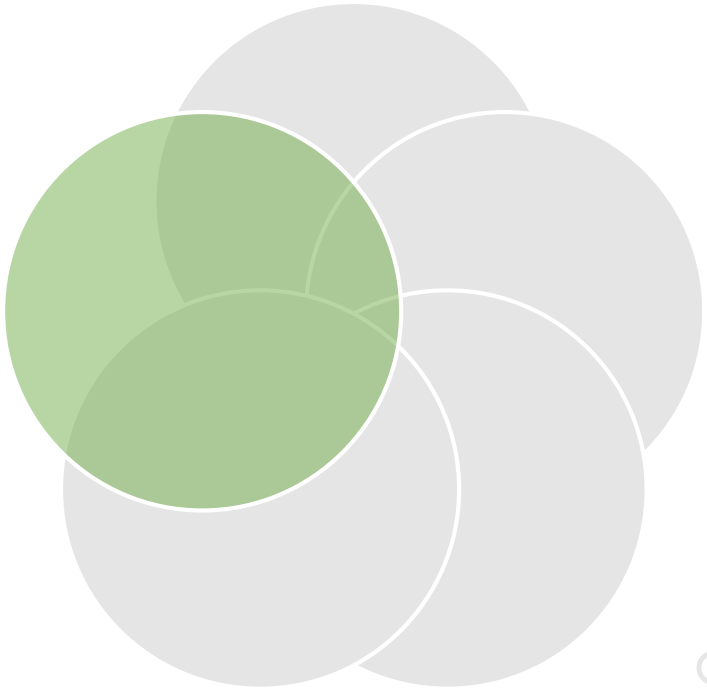
RADIOTHERAPIE

TARGETED
THERAPIE

CHEMOTHERAPIE

HEELKUNDE

ANTI-
HORMONALE
THERAPIE



RADIOTHERAPIE

TARGETED
THERAPIE

CHEMOTHERAPIE

# Antihormonale therapie

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# Hormoonreceptoren

- Oestrogeen & progesteron receptor (ER, PR)
  - Prognostische/predictieve factor
  - Stimulerende functie bij receptor-ligand interactie
- 80% van alle borstkankers zijn hormoongevoelig!
  - ≥1% van tumorcellen positief voor ER

- Adjuvante setting
  - Minder frequent: neo-adjuvante setting (eg. Covid19 pandemie)

# Types endocriene therapie

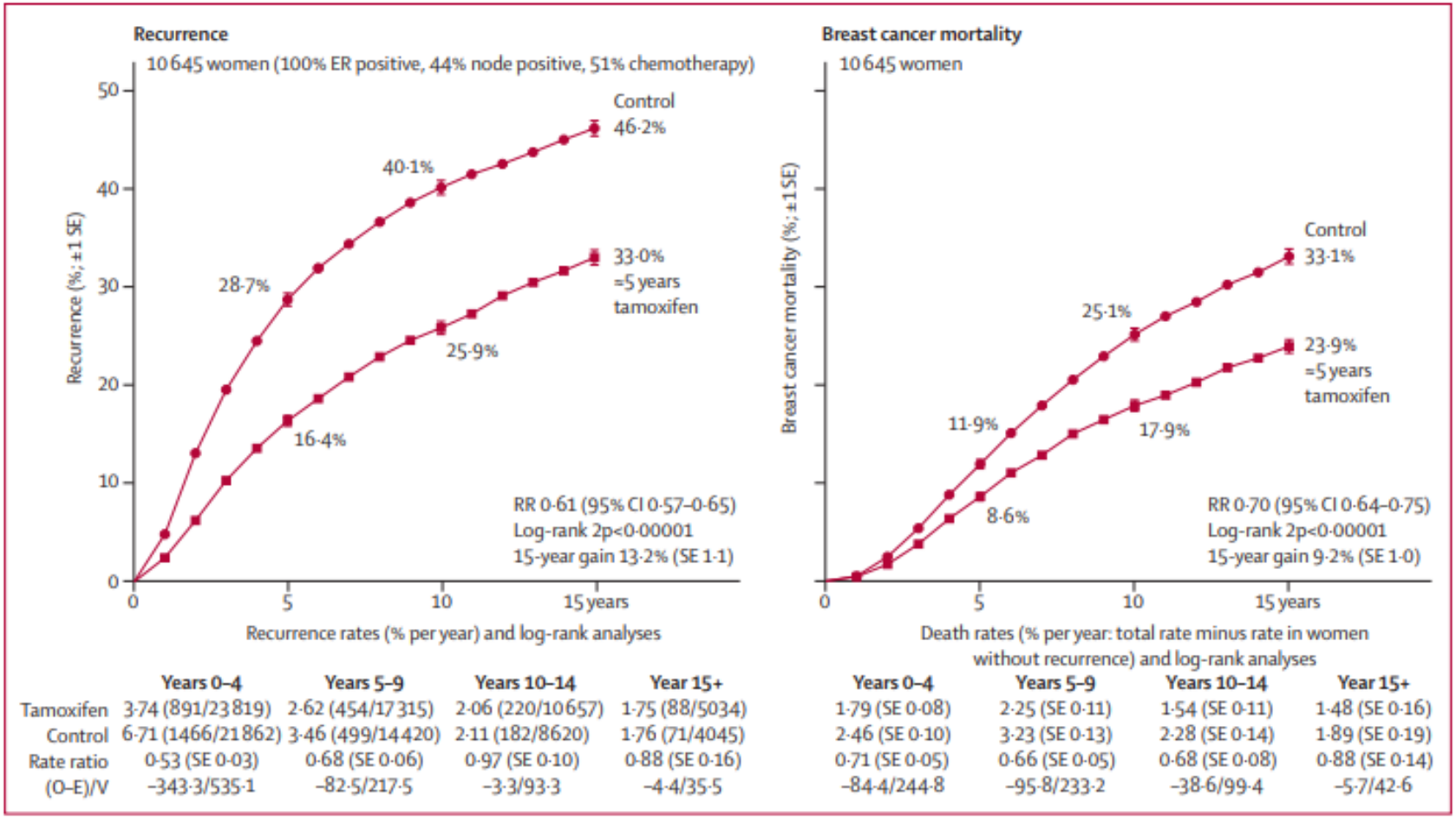
- Selectieve estrogen receptor modulator (SERM)
  - Tamoxifen (*Nolvadex*)

- Aromatase inhibitor
  - Competitief
    - Letrozole (*Femara*)
  - Irreversibel
    - Anastrozole (*Arimidex*)
    - Exemestane (*Aromasin*)

# Tamoxifen

- SERM, ligand voor ER
- Peroraal
- Langetermijn benefit (tot 15 jaar na start behandeling)
- Weefsel-oriëntatie
  - Antagonist: borst, hersenen
  - Agonist: long, lever, bot, endometrium
- Borstkanker
  - Blokkade ER
  - Celgroei onderbroken
- Metabolisme
  - Tamoxifen wordt door CYP2D6 omgezet naar actieve stof

# Tamoxifen



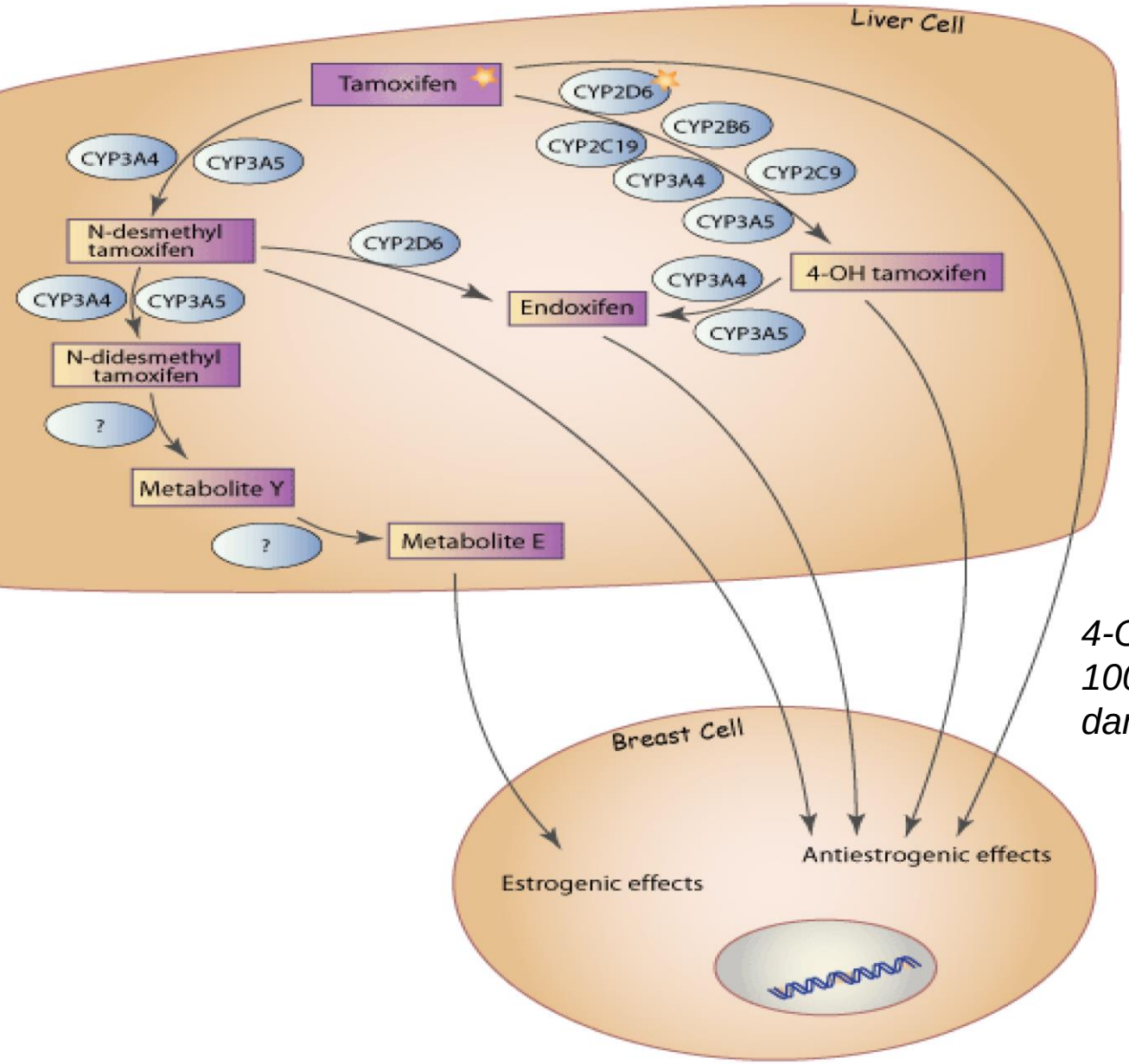

| | Years 0–4 | Years 5–9 | Years 10–14 | Year 15+ |
|---|---|---|---|---|
| Tamoxifen | 3·74 (891/23 819) | 2·62 (454/17 315) | 2·06 (220/10 657) | 1·75 (88/5034) |
| Control | 6·71 (1466/21 862) | 3·46 (499/14 420) | 2·11 (182/8620) | 1·76 (71/4045) |
| Rate ratio | 0·53 (SE 0·03) | 0·68 (SE 0·06) | 0·97 (SE 0·10) | 0·88 (SE 0·16) |
| (O–E)/V | −343·3/535·1 | −82·5/217·5 | −3·3/93·3 | −4·4/35·5 |

| Years 0–4 | Years 5–9 | Years 10–14 | Year 15+ |
|---|---|---|---|
| 1·79 (SE 0·08) | 2·25 (SE 0·11) | 1·54 (SE 0·11) | 1·48 (SE 0·16) |
| 2·46 (SE 0·10) | 3·23 (SE 0·13) | 2·28 (SE 0·14) | 1·89 (SE 0·19) |
| 0·71 (SE 0·05) | 0·66 (SE 0·05) | 0·68 (SE 0·08) | 0·88 (SE 0·14) |
| −84·4/244·8 | −95·8/233·2 | −38·6/99·4 | −5·7/42·6 |

***Figure 5*: Effects of about 5 years of tamoxifen on the 15-year probabilities of recurrence and of breast cancer mortality, for ER-positive disease**
Outcome by allocated treatment in trials of about 5 years of adjuvant tamoxifen. Event rate ratio (RR) is from summed log-rank statistics for all time periods. Gain (and its SE) is absolute difference between ends of graphs. ER=oestrogen receptor. O–E=observed minus expected, with variance V.

*EBCTCG, The Lancet, 2011*

# Tamoxifen & CYP2D6




*4-OH tamoxifen & endoxifen zijn 100x potenter (anti-oestrogeen) dan tamoxifen*



*Ferraldeschi et al, Pharmaceuticals, 2010*

BMJ

RESEARCH

# Selective serotonin reuptake inhibitors and breast cancer mortality in women receiving tamoxifen: a population based cohort study

Catherine M Kelly, medical oncology fellow ,[1,5] David N Juurlink, division head, clinical pharmacology,[1,2,3,4,5,7] Tara Gomes, epidemiologist,[7] Minh Duong-Hua, analyst,[6] Kathleen I Pritchard, professor,[1,2,3,5] Peter C Austin, senior statistician,[5,7] Lawrence F Paszat, senior scientist[1,2,3,5,7]





# Risk of mortality with concomitant use of tamoxifen and selective serotonin reuptake inhibitors: multi-database cohort study

Macarius M Donneyong,[1] Katsiaryna Bykov,[1,2] Pauline Bosco-Levy,[1] Yaa-Hui Dong,[1] Raisa Levin,[1] Joshua J Gagne[1,2]

| Subgroup | No of deaths/total | Hazard ratio (95% CI) | Hazard ratio (95% CI) |
|---|---|---|---|
| **Cohort 1 (SSRI initiated after tamoxifen)** | | | |
| CAREMARK | 46/174 | | 0.94 (0.45 to 2.00) |
| MAX | 126/2112 | | 0.95 (0.67 to 1.33) |
| PACE | 509/624 | | 0.81 (0.67 to 0.97) |
| PAAD | 115/201 | | 1.15 (0.77 to 1.72) |
| UNITED | 195/26 | | |
| Pooled databases (cohort 1) | 991/57 | | |
| **Cohort 2 (tamoxifen initiated after SSRI)** | | | |
| CAREMARK | 101/3 | | |
| MAX | 209/31 | | |
| PACE | 322/4 | | |
| PAAD | 122/2 | | |
| UNITED | 260/37 | | |
| Pooled databases (cohort 2) | 1014/7 | | |
| **Total population (cohorts 1 and 2)** | 2005/13 | | |

Table 2 | Antidepressant exposure and risk of death from breast cancer in women receiving tamoxifen

| Antidepressant | Deaths due to breast cancer | Increase in proportion of co-treatment* | Unadjusted HR (95% CI) | Adjusted HR (95% CI)† |
|---|---|---|---|---|
| Paroxetine (n=630) | 105 | – | – | – |
| | – | 0.25 | 1.17 (1.01 to 1.35) | 1.24 (1.08 to 1.42) |
| | – | 0.50 | 1.36 (1.02 to 1.82) | 1.54 (1.17 to 2.03) |
| | – | 0.75 | 1.59 (1.03 to 2.46) | 1.91 (1.26 to 2.89) |
| Fluoxetine (n=253) | 71 | – | – | – |
| | – | 0.25 | 0.96 (0.81 to 1.13) | 0.97 (0.82 to 1.15) |
| | – | 0.5 | 0.92 (0.66 to 1.27) | 0.94 (0.67 to 1.32) |
| | – | 0.75 | 0.88 (0.54 to 1.43) | 0.91 (0.55 to 1.51) |
| Sertaline (n=541) | 115 | – | – | – |
| | – | 0.25 | 0.96 (0.84 to 1.09) | 1.00 (0.88 to 1.14) |
| | – | 0.5 | 0.92 (0.71 to 1.19) | 1.00 (0.77 to 1.29) |
| | – | 0.75 | 0.88 (0.60 to 1.30) | 0.99 (0.67 to 1.47) |
| Fluvoxamine (n=174) | 38 | – | – | – |
| | – | 0.25 | 1.04 (0.85 to 1.26) | 0.98 (0.81 to 1.19) |
| | – | 0.5 | 1.08 (0.73 to 1.60) | 0.96 (0.66 to 1.40) |
| | – | 0.75 | 1.12 (0.62 to 2.01) | 0.94 (0.53 to 1.66) |
| Citalopram (n=467) | 29 | – | – | – |
| | – | 0.25 | 0.95 (0.71 to 1.26) | 1.10 (0.82 to 1.47) |
| | – | 0.5 | 0.90 (0.51 to 1.59) | 1.21 (0.68 to 2.16) |
| | – | 0.75 | 0.85 (0.36 to 2.01) | 1.33 (0.56 to 3.17) |
| Venlafaxine (n=365) | 16 | – | – | – |
| | – | 0.25 | 0.61(0.37 to 0.99) | 0.67 (0.41 to 1.09) |
| | – | 0.5 | 0.37(0.14 to 0.98) | 0.45 (0.17 to 1.20) |
| | – | 0.75 | 0.22 (0.05 to 0.97) | 0.30 (0.07 to 1.31) |

*Absolute increases in proportion of time on tamoxifen treatment during which an antidepressant was co-prescribed.
†Adjusted for age in the year before stopping tamoxifen, year of starting tamoxifen, duration of tamoxifen treatment, timing of tamoxifen in relation to date of breast cancer diagnosis (within one year of diagnosis or thereafter), socioeconomic status, comorbidity[33] in the year before stopping tamoxifen, and receipt of other CYP2D6 inhibiting drugs (bupropion, quinidine, thioridazine, amiodarone, cimetidine or chloroquine) during tamoxifen treatment.

Voorzichtigheid!
Alternatieven!

# Tamoxifen

- Aandachtspunten
  - Paroxetine/fluoxetine (sterke CYP2D6 inhibitoren)
  - Endometrium-agonist
    - Agonist-effect
      - Poliep, hyperplasie, endometriumcarcinoom
    - Echografisch routinematig screenen niet aanbevolen
      - Lage incidentie maligniteit, hoog vals-positief percentage
    - WEL diagnostiek (inclusief APD) inzetten bij abnormaal bloedverlies/afscheiding
  - Verhoogd risico of veneuze trombo-embolie!
    - CAVE patiënten met voorgeschiedenis van VTE → AI

The American College of Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

# COMMITTEE OPINION

Number 601 • June 2014
(Reaffirmed 2017)

*(Replaces Committee Opinion Number 336, June 2006)*

**Committee on Gynecologic Practice**

*This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.*

## Tamoxifen and Uterine Cancer

**ABSTRACT:** Tamoxifen, a nonsteroidal antiestrogen agent, is widely used as adjunctive therapy for women with breast cancer, and it has been approved by the U.S. Food and Drug Administration for adjuvant treatment of

Postmenopausal women taking tamoxifen should be closely monitored for symptoms of endometrial hyperplasia or cancer. Premenopausal women treated with tamoxifen have no known increased risk of uterine cancer and require no additional monitoring beyond routine gynecologic care.

should be investigated. Postmenopausal women taking tamoxifen should be closely monitored for symptoms of endometrial hyperplasia or cancer. Premenopausal women treated with tamoxifen have no known increased risk of uterine cancer and require no additional monitoring beyond routine gynecologic care. Unless the patient has been identified to be at high risk of endometrial cancer, routine endometrial surveillance has not proved to be effective in increasing the early detection of endometrial cancer in women using tamoxifen and is not recommended. If atypical endometrial hyperplasia develops, appropriate gynecologic management should be instituted, and the use of tamoxifen should be reassessed.

Breast Cancer Research and Treatment (2020) 180:833–834
https://doi.org/10.1007/s10549-020-05595-5

LETTER TO THE EDITOR

# Uterine ultrasound and endometrial biopsy in tamoxifen users

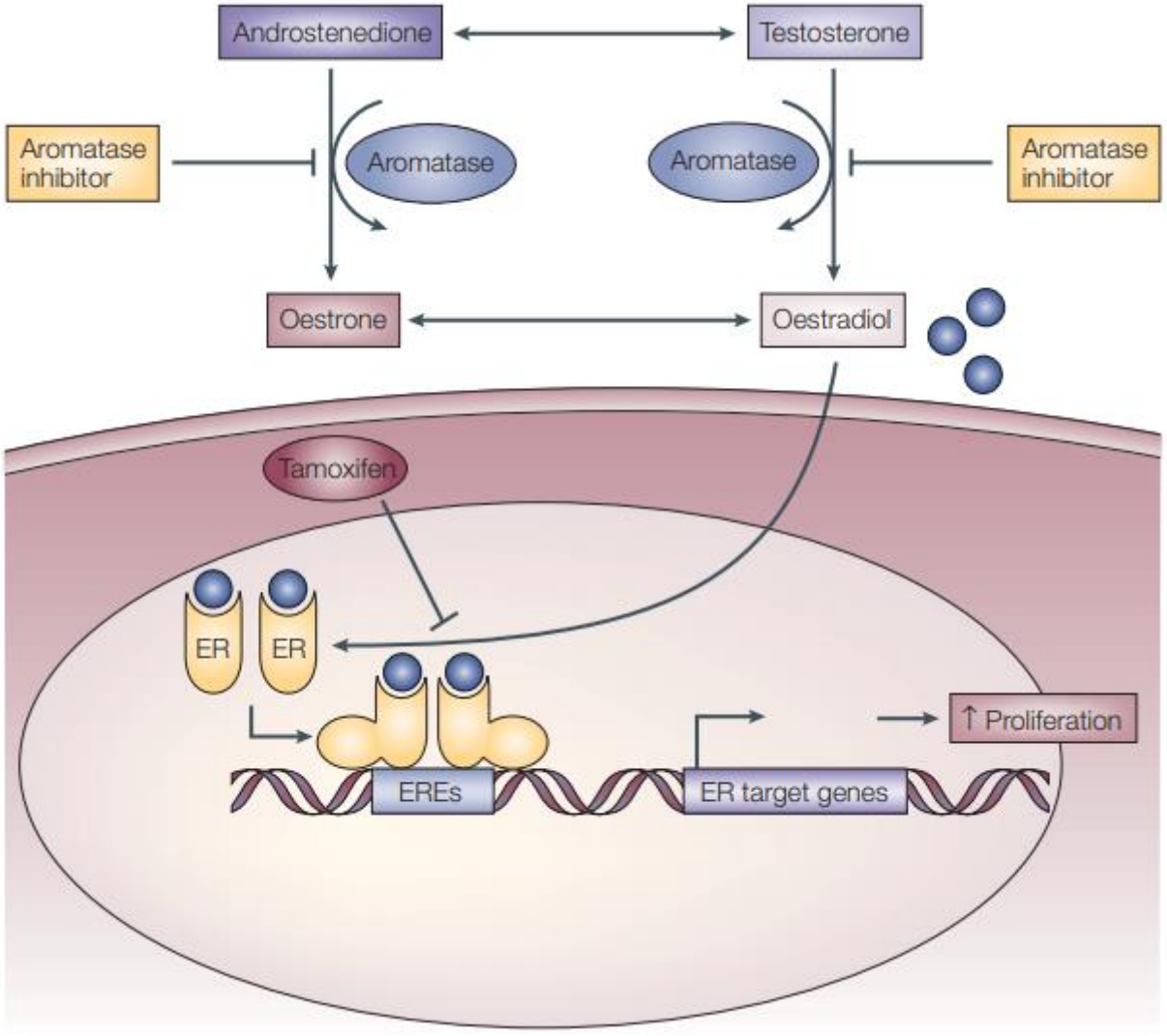
P. Neven[1] · W. Froyman[1] · S. Timmerman[1] · D. Timmerman[1]

another concern. Knowing that tamoxifen-associated endometrial polyps are not precursors of malignancy [4], we previously stated that a large proportion of tamoxifen users without endometrial pathology at the start will develop such subclinical lesions and that (regular) screening asymptomatic tamoxifen users with ultrasonography for endometrial pathology will lead to unnecessary anxiety, overtreatment of asymptomatic endometrial lesions, and even compromise patients' compliance with a life saving drug as tamoxifen therapy [5]. First, do not harm and do not advise tamoxifen users neither regular ultrasonography for endometrial screening nor more gynecologic examinations like painful blind endometrial biopsies. Appropriate assessment of the uterine cavity is only required with abnormal vaginal bleeding on tamoxifen.

# Aromatase inhibitoren

- Peroraal
  - Letrozole
  - Anastrozole
  - Exemestane
- Inhibitie enzym aromatase
  - Postmenopauze: oestrogeenproductie = perifeer
  - AI: blokkade perifere productie van oestrogenen
- Osteoporose
  - Botdensitometrie voor start AI!

# Overzicht werking SERM – AI






*Johnston & Dowsett, Nature Reviews Cancer, 2003*

# Keuze van antihormonaal farmacum

## Tamoxifen vs aromatase inhibitor

- Premenopauzaal

**Laag-risico patiënten**

- 5 jaar tamoxifen (*Nolvadex, Tamoplex, Tamoxifen*)
  - Korter = slechtere outcome
- Dagelijks 20mg
- Perimenopauzaal:
  - 2 jaar tamoxifen, gevolgd door **5** jaar AI

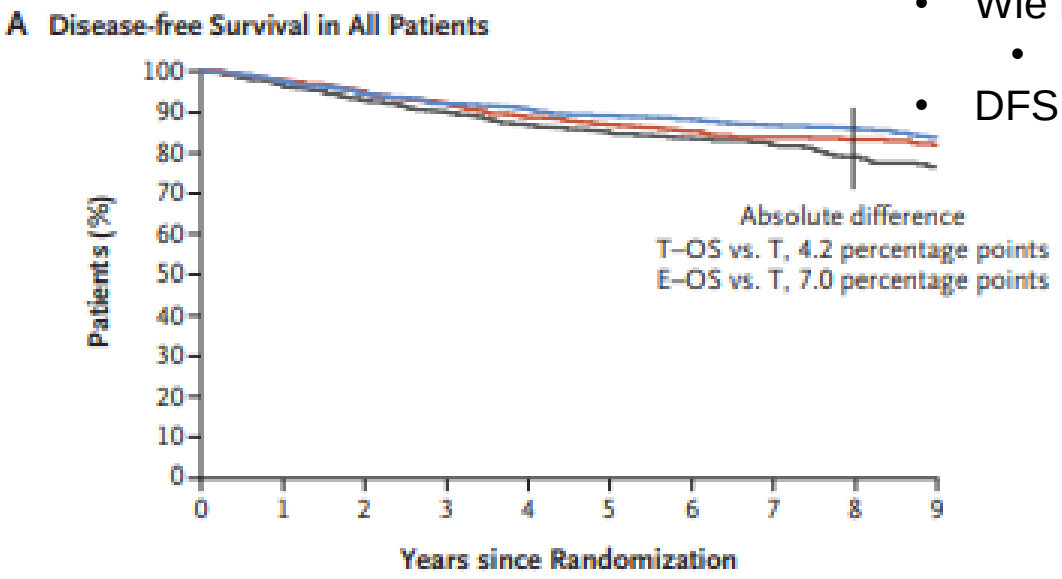
# Keuze van antihormonaal farmacum

**Tamoxifen vs aromatase inhibitor**

- Premenopauzaal

## Hoog-risico patiënten

- AI (5j) + ovariële functie suppressie (OFS)
- Nevenwerkingen!
- Wie is hoog risico?
  - Chemotherapie, jong,…
- DFS en OS beter dan tamoxifen alleen




| No. at Risk | | | | | |
|---|---|---|---|---|---|
| T | 957 | 858 | 771 | 522 | 221 |
| T–OS | 968 | 888 | 795 | 558 | 252 |
| E–OS | 956 | 875 | 805 | 562 | 246 |

| | No. of Patients | No. of Events | 8-Yr Disease-free Survival Rate % | Hazard Ratio (95% CI) vs. T |
|---|---|---|---|---|
| T | 1018 | 208 | 78.9 | |
| T–OS | 1015 | 167 | 83.2 | 0.76 (0.62–0.93) |
| E–OS | 1014 | 143 | 85.9 | 0.65 (0.53–0.81) |

# Keuze van antihormonaal farmacum

## Tamoxifen vs aromatase inhibitor

- Postmenopauzaal

**Alle patiënten**

- 5 jaar aromatase inhibitor standaard
  - Eventueel tamoxifen bij low-risk (beter tolerantieprofiel)
- Dagelijks

# Keuze van antihormonaal farmacum

## Tamoxifen vs aromatase inhibitor

- Hoelang antihormonale therapie?
- Tamoxifen
  - 5 jaar
  - High risk patiënten overweeg 10 jaar

# Keuze van antihormonaal farmacum

## Tamoxifen vs aromatase inhibitor

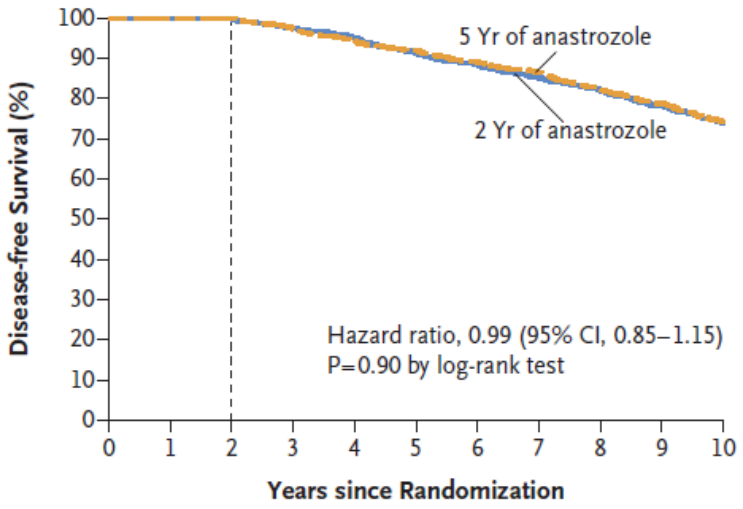
- Hoelang antihormonale therapie?
- Tamoxifen
  - 5 jaar
  - High risk patiënten overweeg 10 jaar (eg. N+)
- Aromatase inhibitor
  - 5 jaar
  - High risk patiënten overweeg verlengde AI behandeling (eg. N+)

The NEW ENGLAND JOURNAL of MEDICINE
ESTABLISHED IN 1812 JULY 29, 2021 VOL. 385 NO. 5

# Duration of Adjuvant Aromatase-Inhibitor Therapy in Postmenopausal Breast Cancer

M. Gnant, F. Fitzal, G. Rinnerthaler, G.G. Steger, S. Greil-Ressler, M. Balic, D. Heck, R. Jakesz, J. Thaler, D. Egle, D. Manfreda, V. Bjelic-Radisic, U. Wieder, C.F. Singer, E. Melbinger-Zeinitzer, F. Haslbauer, P. Sevelda, H. Trapl, V. Wette, K. Wimmer, S.P. Gampenrieder, R. Bartsch, S. Kacerovsky-Strobl, C. Suppan, C. Brunner, C. Deutschmann, L. Soelkner, C. Fesl, and R. Greil, for the Austrian Breast and Colorectal Cancer Study Group*

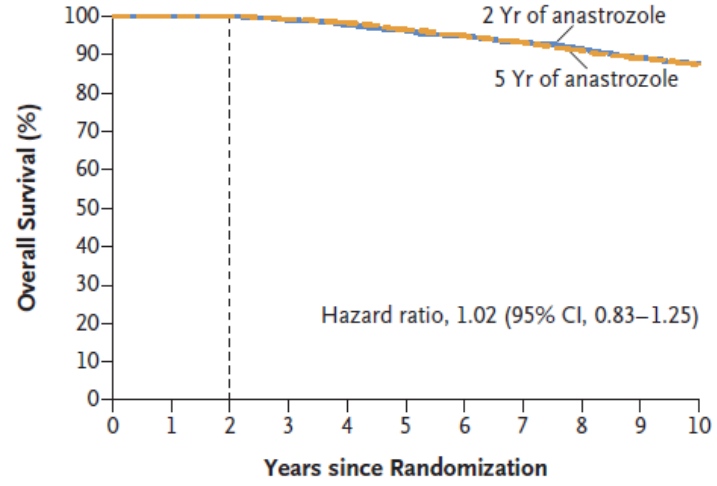
**A Disease-free Survival**




**No. at Risk**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 Yr of anastrozole | 1732 | 1603 | 1540 | 1478 | 1378 | 1267 | 1107 | 889 | 657 | 298 |
| 5 Yr of anastrozole | 1738 | 1605 | 1551 | 1485 | 1402 | 1295 | 1136 | 913 | 673 | 300 |

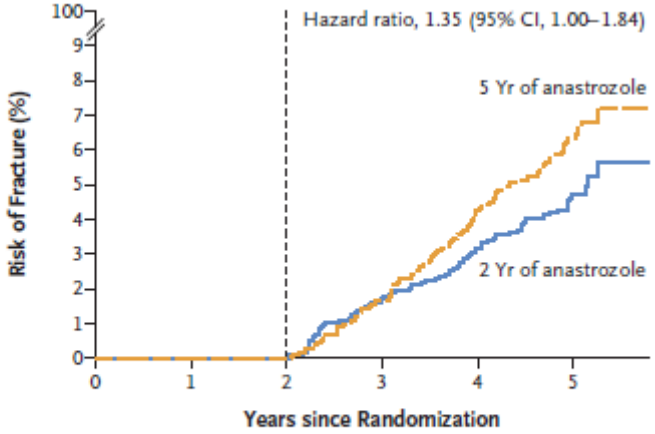
**B Overall Survival**




**No. at Risk**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 2 Yr of anastrozole | 1732 | 1665 | 1645 | 1620 | 1588 | 1552 | 1451 | 1233 | 1000 | 558 |
| 5 Yr of anastrozole | 1738 | 1670 | 1655 | 1634 | 1593 | 1558 | 1457 | 1244 | 986 | 542 |

**A Risk of Bone Fracture**




**No. at Risk**

| | | | | | |
|---|---|---|---|---|---|
| 2 Yr of anastrozole | 1732 | 1555 | 1479 | 1385 | 882 |
| 5 Yr of anastrozole | 1738 | 1570 | 1513 | 1415 | 905 |

Verlengde behandeling AI = 7-8 jaar

# Nevenwerkingen

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# Nevenwerkingen

- *“Het is gelukkig geen chemotherapie”*

ESMO GOOD SCIENCE BETTER MEDICINE BEST PRACTICE

*Annals of Oncology* 30: 1784–1795, 2019
doi:10.1093/annonc/mdz298
Published online 8 October 2019

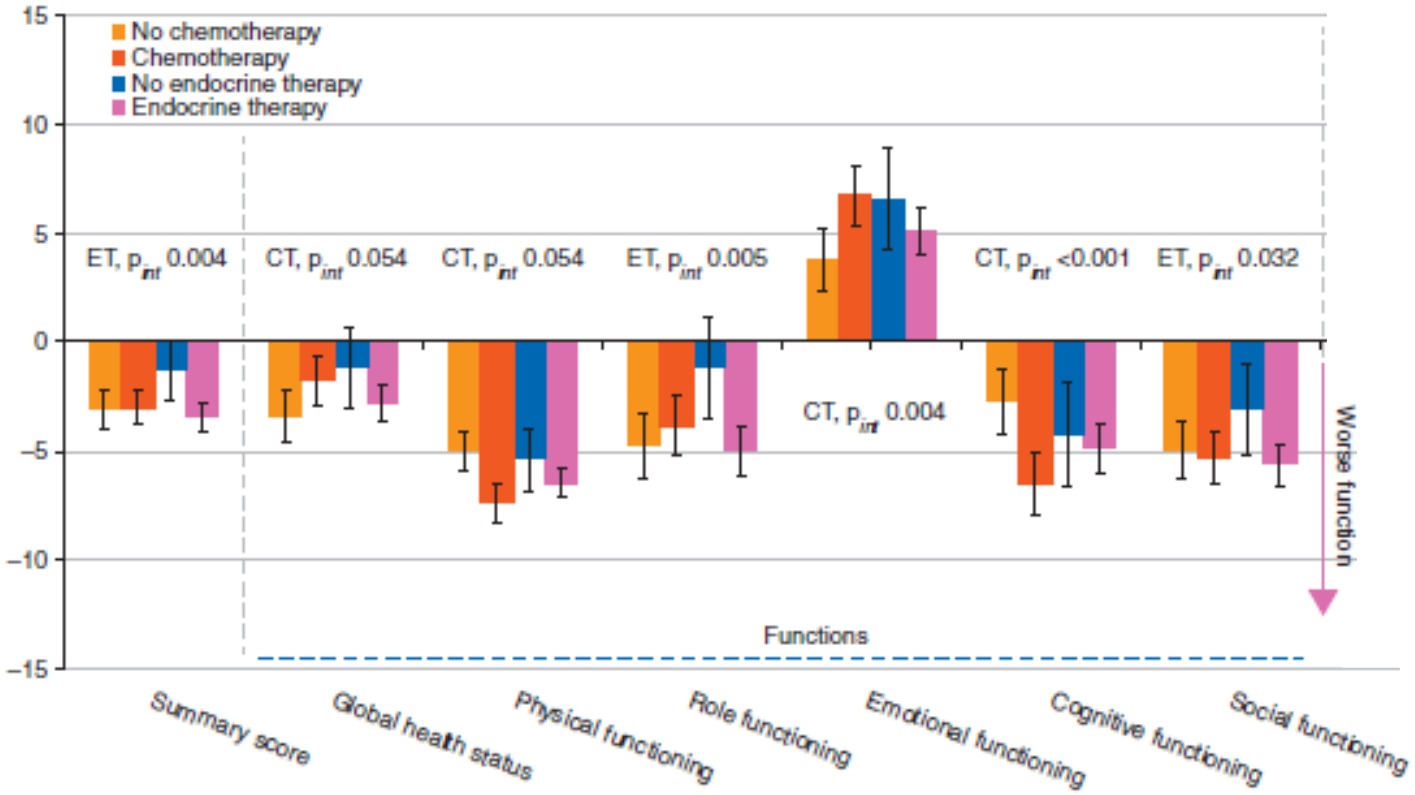
ORIGINAL ARTICLE

## Differential impact of endocrine therapy and chemotherapy on quality of life of breast cancer survivors: a prospective patient-reported outcomes analysis

A. R. Ferreira[1,2], A. Di Meglio[1], B. Pistilli[3], A. S. Gbenou[1], M. El-Mouhebb[1], S. Dauchy[4], C. Charles[4], F. Joly[5], S. Everhard[6], M. Lambertini[7,8], C. Coutant[9], P. Cottu[10], F. Lerebours[11], T. Petit[12], F. Dalenc[13], P. Rouanet[14], A. Arnaud[15], A. Martin[6], J. Berille[16], P. A. Ganz[17], A. H. Partridge[18], S. Delaloge[3], S. Michiels[19,20], F. Andre[1,3] & I. Vaz-Luis[1,3*]

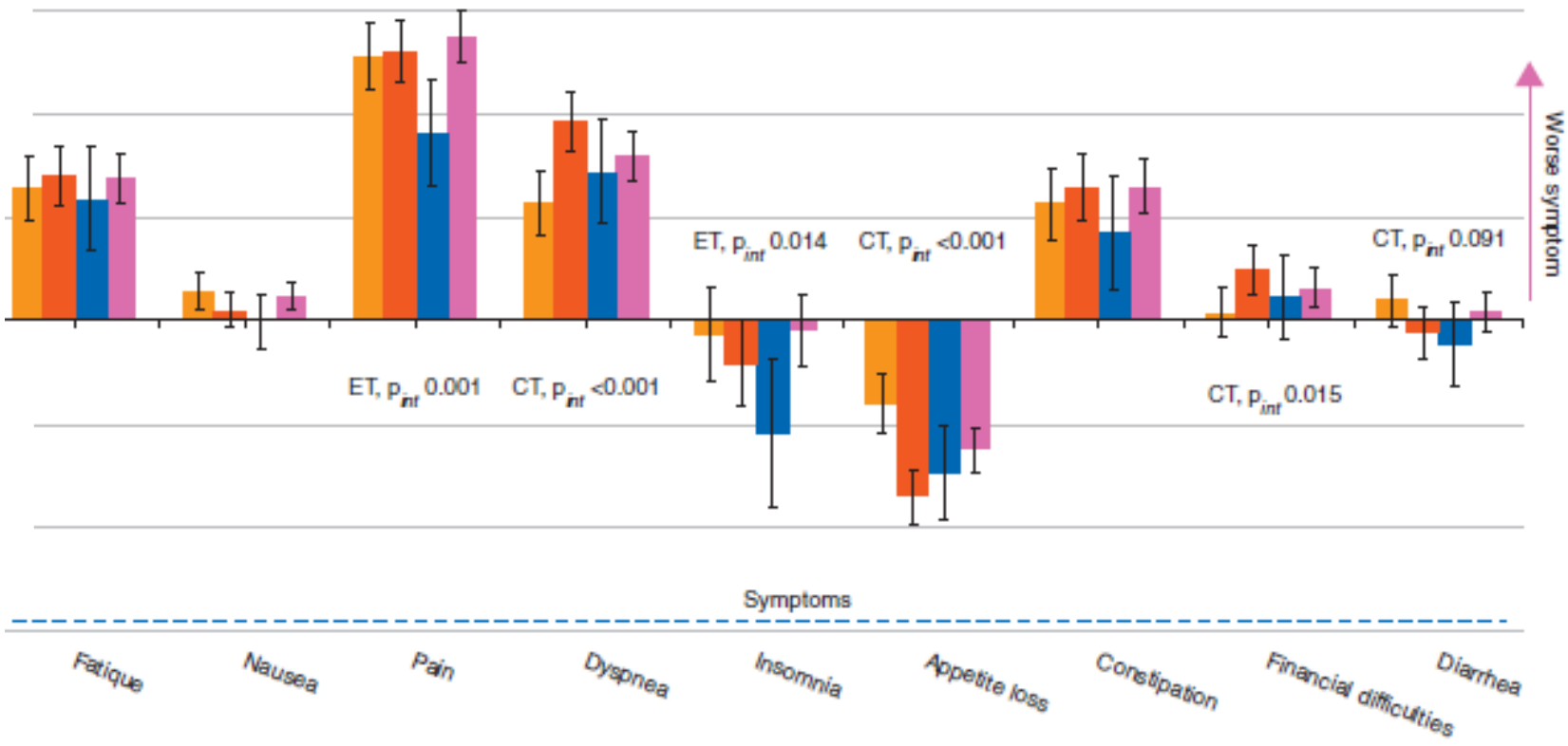
# Nevenwerkingen

## Functionering – verschil 2 jaar na diagnose



# Nevenwerkingen

## Symptomen – verschil 2 jaar na diagnose



# Nevenwerkingen

**Table 1.** Relative prevalence of estrogen deprivation conditions after treatment with various forms of endocrine therapy

| Condition | Tamoxifen | Aromatase inhibitor | Fulvestrant |
|---|---|---|---|
| Hot flashes | +++ | ++ | +++ |
| Osteoporosis | –[a] | ++ | [b] |
| Vaginal discharge | +++ | + | [b] |
| Vaginal dryness | + | +++ | [b] |
| Myalgias/arthralgias | - | +++ | + |

[a]Tamoxifen has agonist effects on bone metabolism in postmenopausal women.
[b]Unclear reports of these side effects.

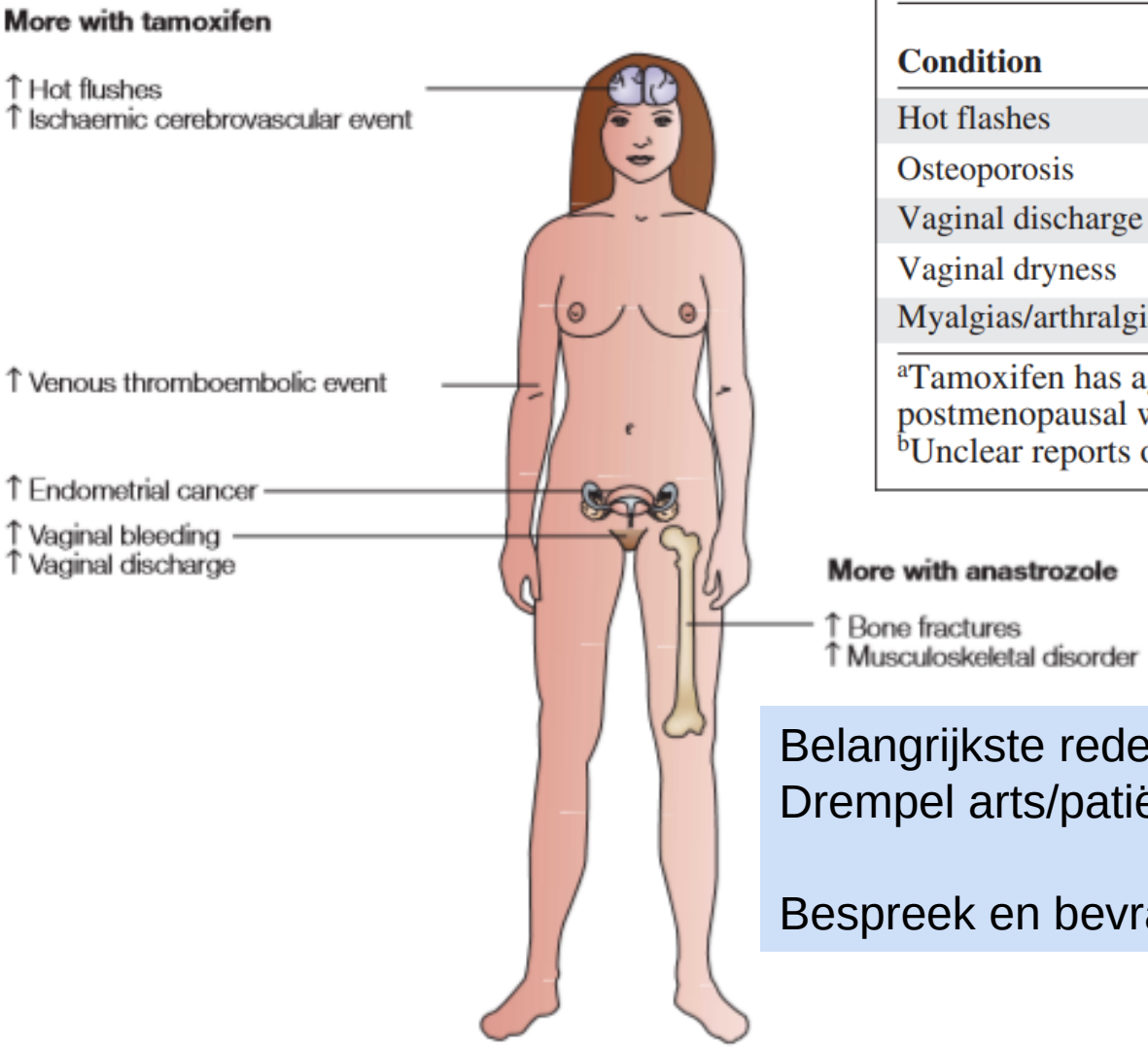
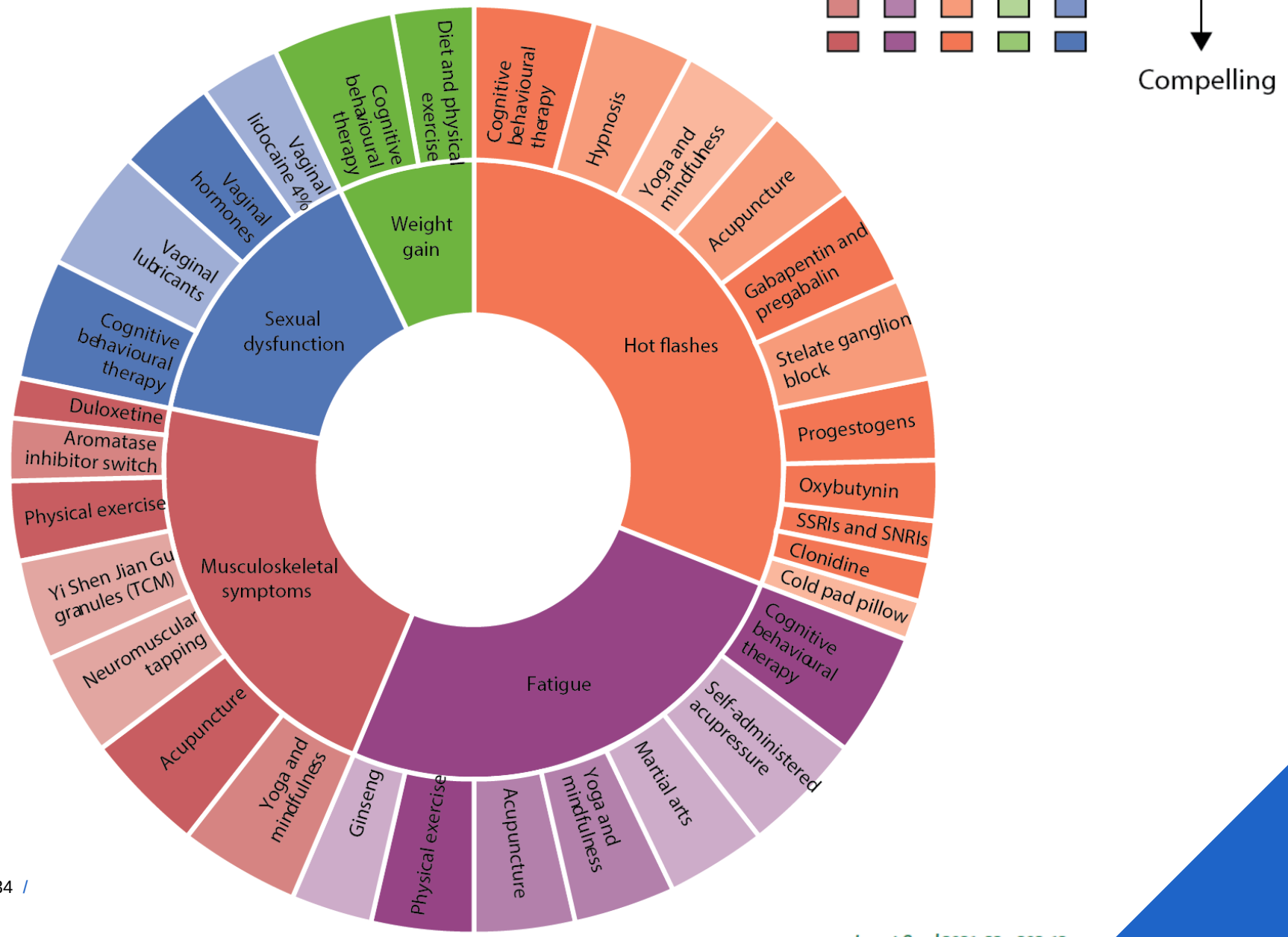



Figure 6 | **Side effects of anastrozole compared with tamoxifen.** The most significant adverse effects of anastrozole and tamoxifen on normal tissues in postmenopausal women with breast cancer that were recorded as pre-specified events in the ATAC trial[7].

Belangrijkste reden voor stoppen behandeling!
Drempel arts/patiënte

Bespreek en bevraag!

# Nevenwerkingen



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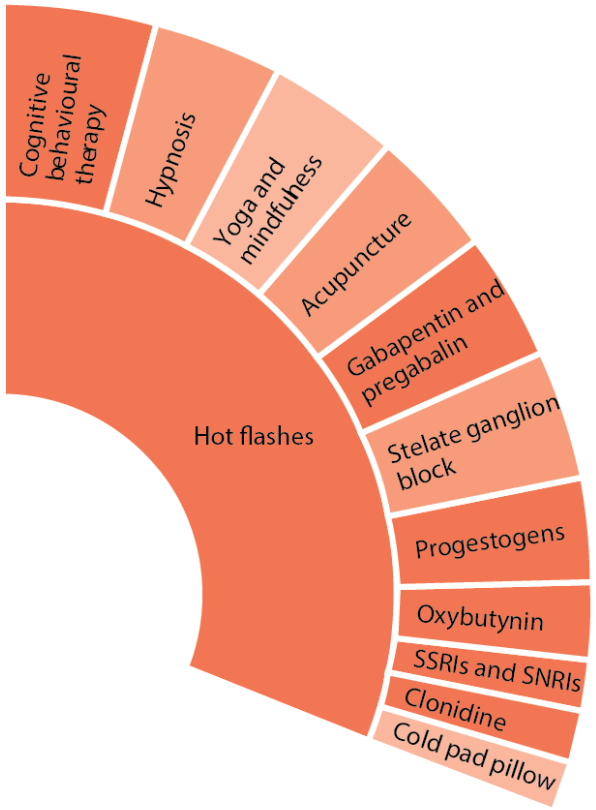
# Nevenwerkingen



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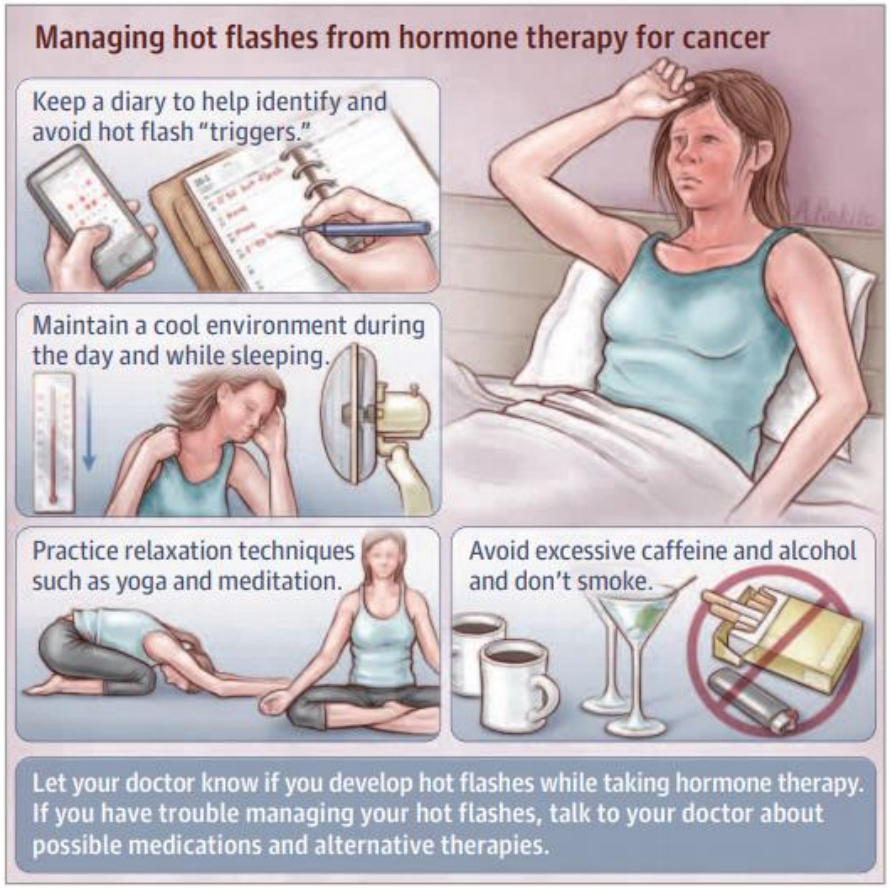
# Vasomotore klachten




*JAMA Oncology patient page*

- Niet-medicamenteuze behandelingen
  - Cfr patient page
- Medicamenteuze behandelingen
  - Plantaardig
    - Stuifmeel extracten (Sérélys)
    - Zilverkaars (Laclim)
  - SSRI/SNRI
    - Venlafaxine
    - Citalopram
  - Anti-epilepticum
    - Clonidine
    - Gabapentine
  - Anti-cholinergicum
    - Oxybutinine

# Vasomotore klachten
## SSRI/SNRI

- Dosis lager dan antidepressieve dosage
- Minder bijwerkingen
  - Duizeligheid > inname ‘s avonds
- Enkele weken gebruiken alvorens evaluatie

- Venlafaxine slow-release 37,5-150mg
  - Ideale dosis 75mg
  - Oraal, dagelijks
- Citalopram 10-20mg
  - Oraal, dagelijks
  - Beter verdragen dan venlafaxine

# Vasomotore klachten

## Anti-cholinergicum oxybutinine

- Klassiek gebruik bij overactieve blaas
- Dosis: 1 tot 2x per dag 5mg
- Cave anticholinerge nevenwerkingen
- Cave oudere patiënte

# Vasomotore klachten

## Anti-epilepticum gabapentine

- Dosis opbouwen
  - 3d100mg enkele dagen
  - Opbouwen naar 3d300mg
- Afbouwen indien stoppen
- Slaperigheid

# Nevenwerkingen




*Lancet Oncol* 2021; 22: e303–13

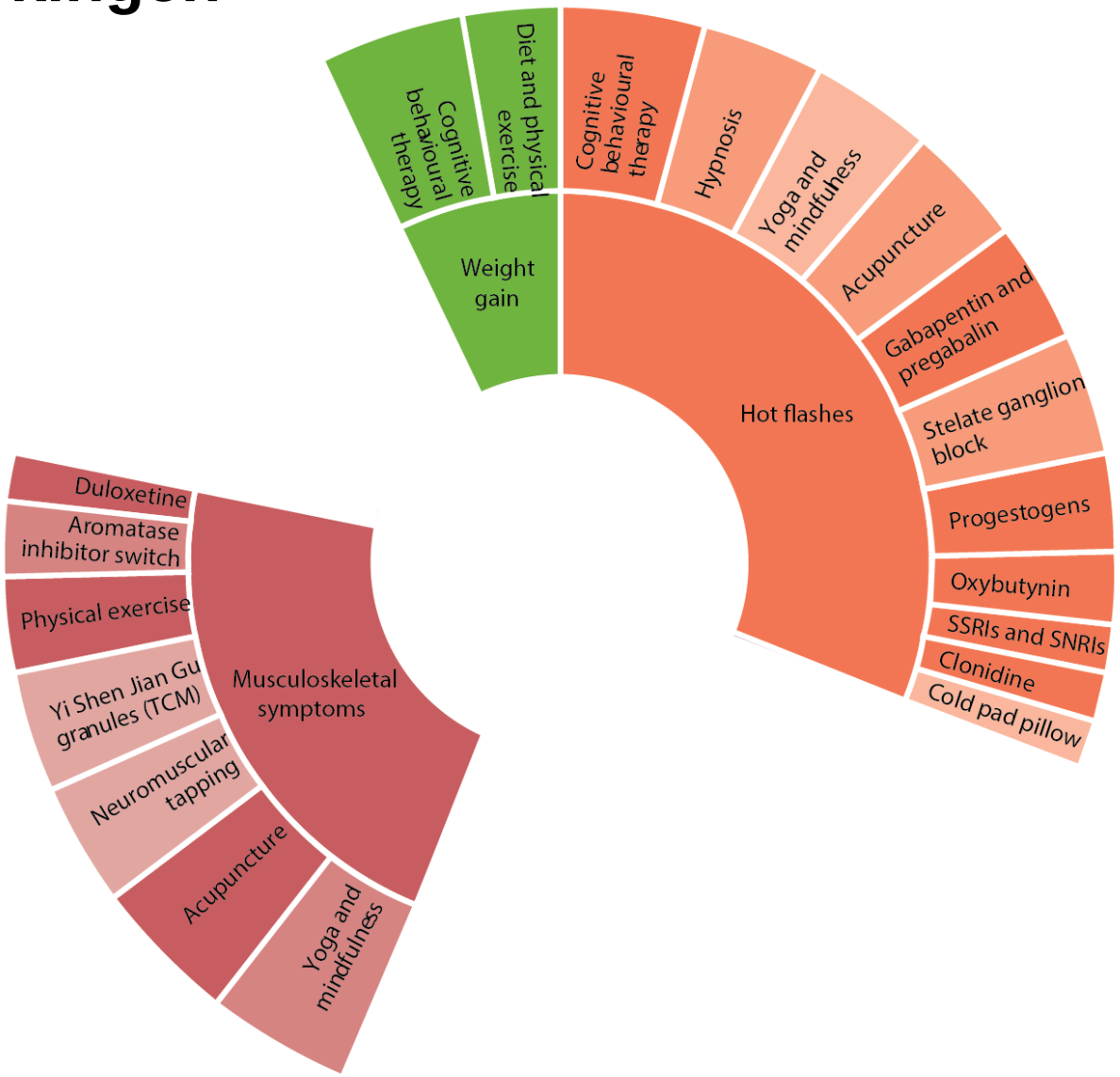
# Musculoskeletale pijnklachten

- Tekort aan grote gerandomiseerde studies
- Globale aanpak
  - Psycologische ondersteuning/aanpak

- Bewegen!
- Pijnstilling

- Beperkte evidentie/tegenstrijdige resultaten
  - Glucosamine
  - Vitamine D
  - Acupunctuur

# Nevenwerkingen



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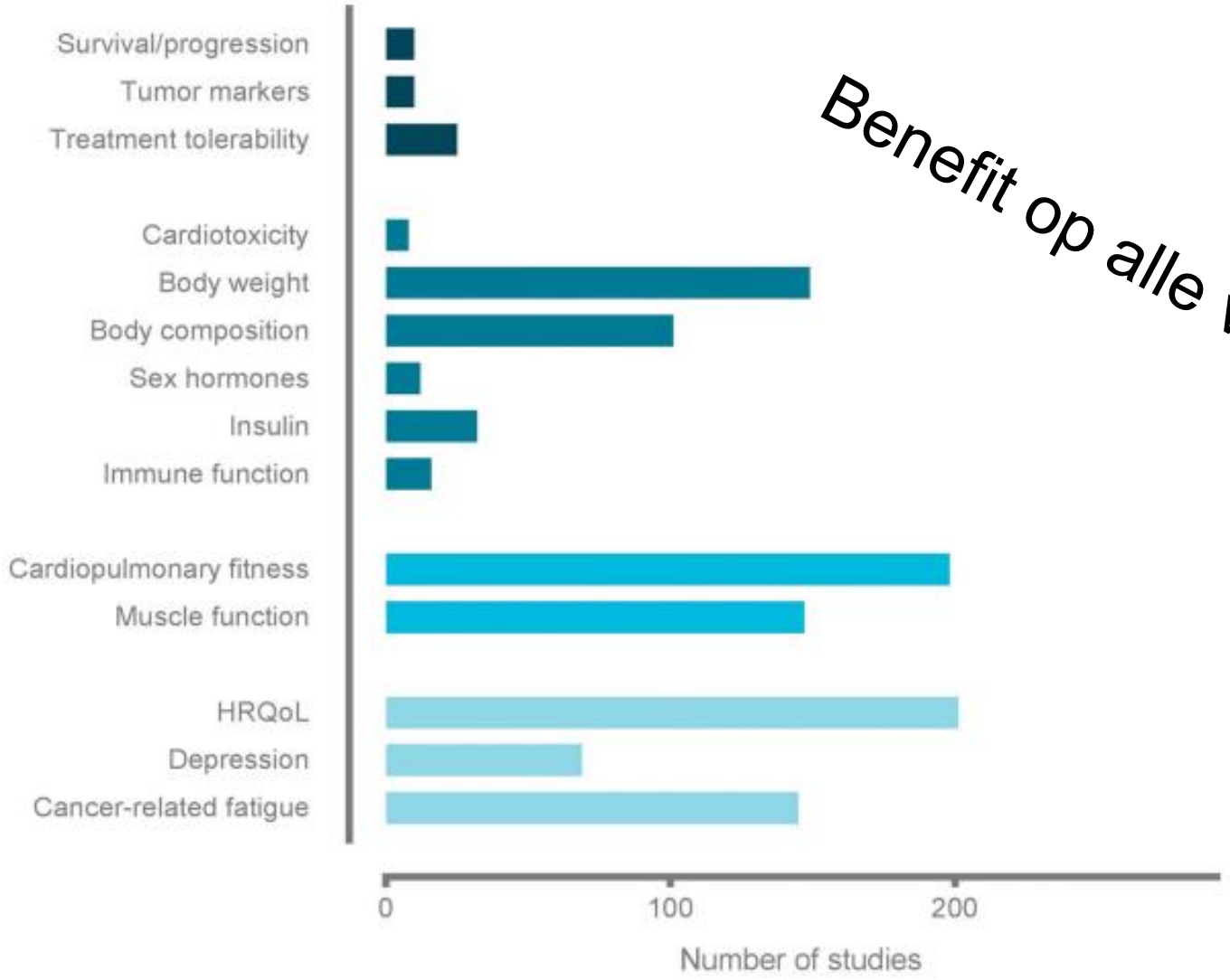
# Gewichtstoename

- Dieet
- Bewegen!

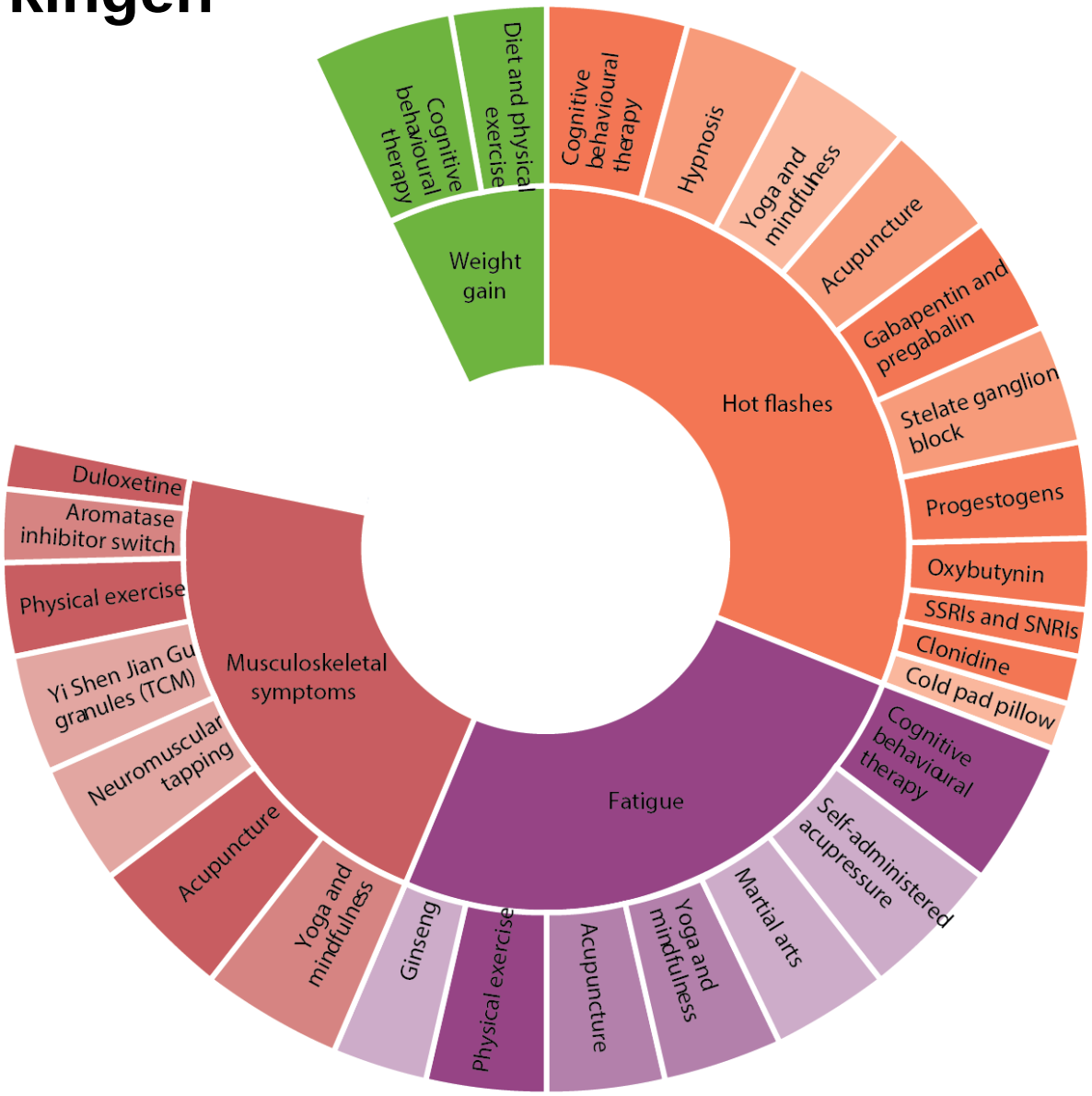
# Exercise Training in Cancer Control and Treatment

*Jesper Frank Christensen,[1] Casper Simonsen,[1] and Pernille Hojman*[*1]*




Benefit op alle vlakken!

# Nevenwerkingen



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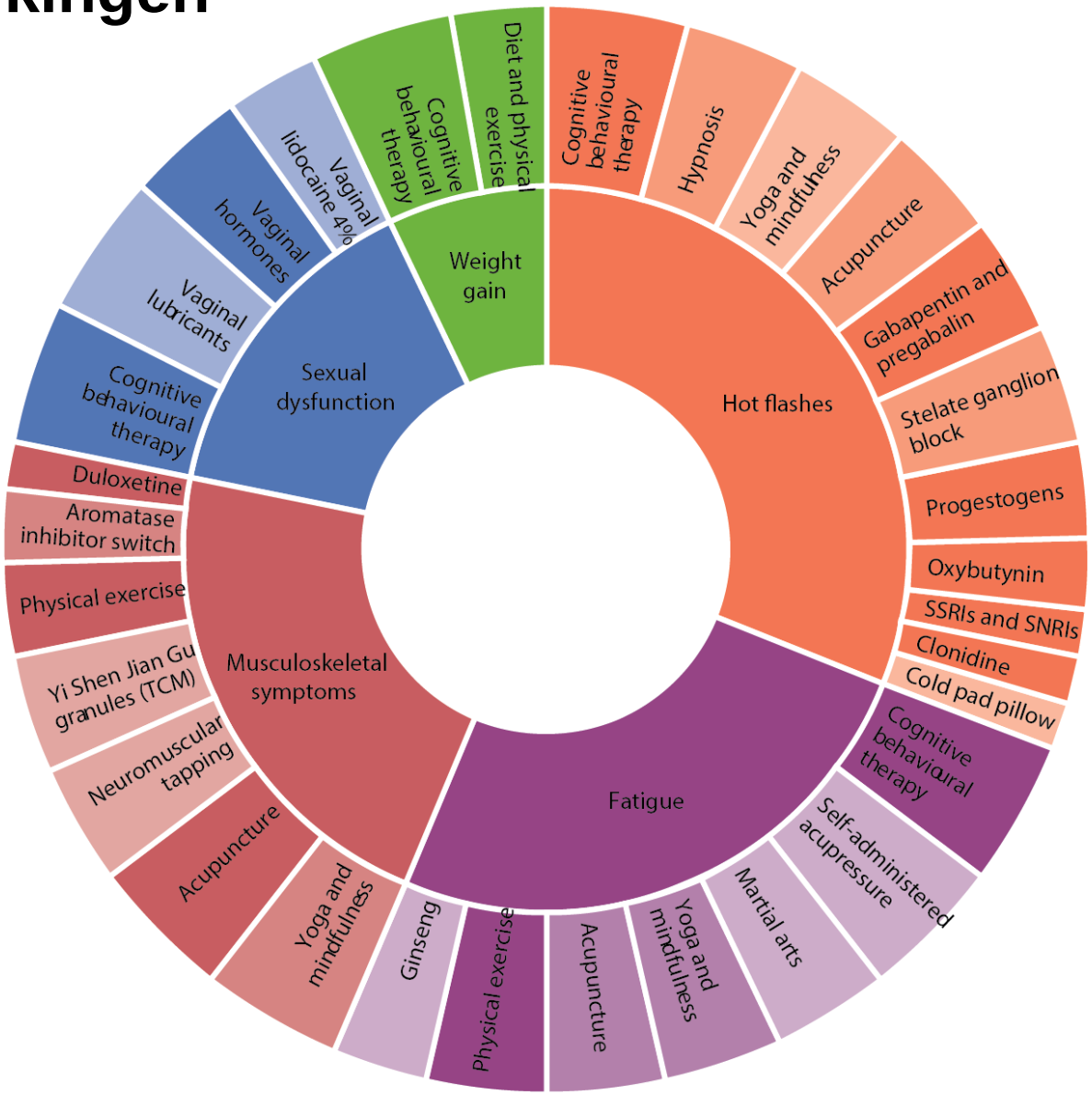
# Vermoeidheid

- Bewegen!

- Yoga
- Mindfulness
- Acupunctuur

# Nevenwerkingen



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# Seksuele dysfunctie

- Wat is seksualiteit?

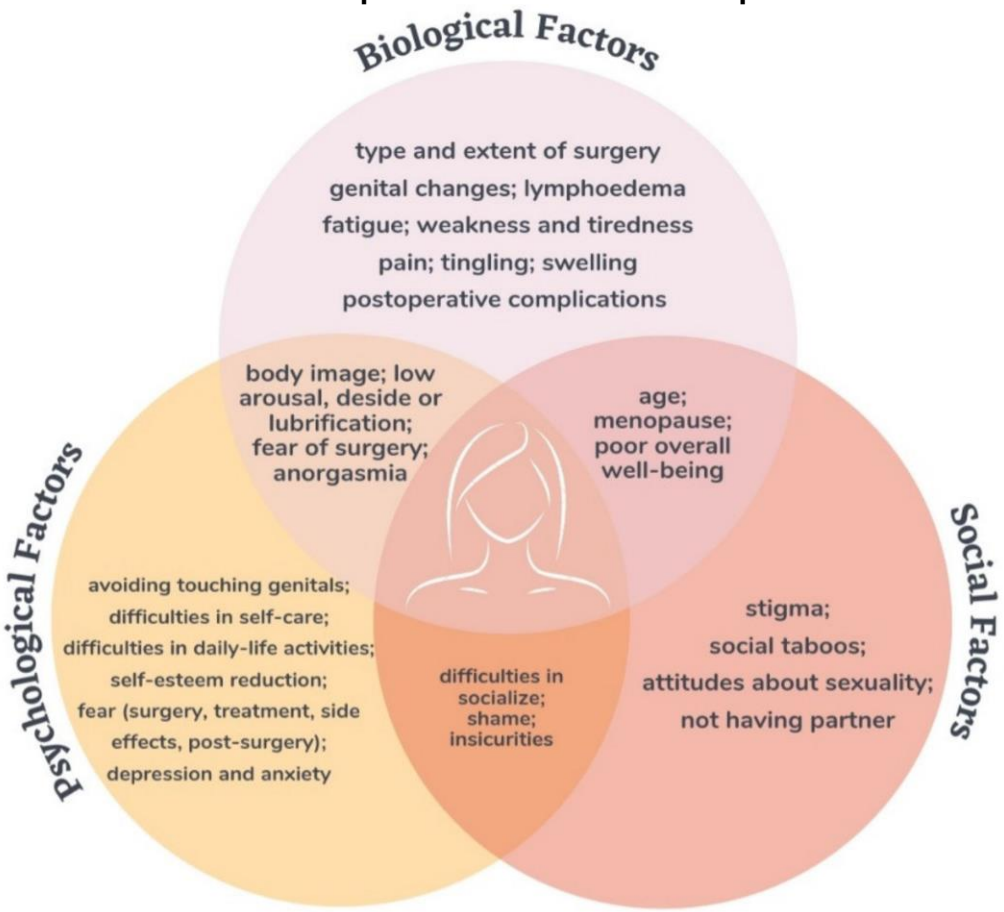
*World Association for Sexual Health:*

- *Seksualiteit is een centraal aspect van mens-zijn gedurende het hele leven. Het omvat seks, genderidentiteit en -rollen, seksuele geaardheid, erotiek, plezier, intimiteit en voortplanting.*
- *Seksualiteit wordt ervaren en uitgedrukt in gedachten, fantasieën, verlangens, overtuigingen, attitudes, waarden, gedragingen, praktijken, rollen en relaties.*
- *Hoewel seksualiteit al deze dimensies kan omvatten, worden ze niet altijd allemaal ervaren of uitgedrukt*

NOT just sex

# Seksuele dysfunctie

- Impakt van kanker op seksualiteit




- Multifactorieel
  - Bio-psycho-sociaal
- It takes two to tango
  - Partner!

# Seksuele dysfunctie

- Vulvovaginale atrofie
  - Hypo-oestrogen effect
  - Frequent klinisch probleem → **Hoger bij kankerpatiënten!**
    - 15% premenopauzaal
    - 40-54% postmenopauzaal
  - Onderschatting van incidentie
    - Drempel bespreekbaarheid hulpverlener/patiënt
    - Onwetendheid
    - …

# Vaginale droogte

- Sterk onderkent probleem
- Behandelingen zijn mogelijk
  - Stapsgewijs proces
- Counseling tav lokale hormoon behandelingen

# Vaginale droogte

“In 2016, a committee of the American College of Obstetricians and Gynecologists cited data showing that low-dose vaginal estrogens do not result in sustained serum estrogen levels exceeding the normal postmenopausal range, and that the **use of vaginal estrogens does not increase the risk of cancer recurrence**. However, they recommend caution with vaginal estrogen use, especially in women with a history of estrogen-dependent breast cancer, reserving it for patients with GSM symptoms nonresponsive to nonhormonal treatment and specifying that it be used in **low doses**.”

# Vaginale droogte

- Niet-hormonale behandeling = 1e keuze
  - Glijmiddel
  - Moisturizer/bevochtiger
    - Hyaluronzuur

- Lokale hormonale behandeling
  - Veilig, doch overleg!
  - Geen verhoogd hervalrisico
  - Sterke verbetering QoL
  - 2 types:
    - DHEA
    - Oestrogenen

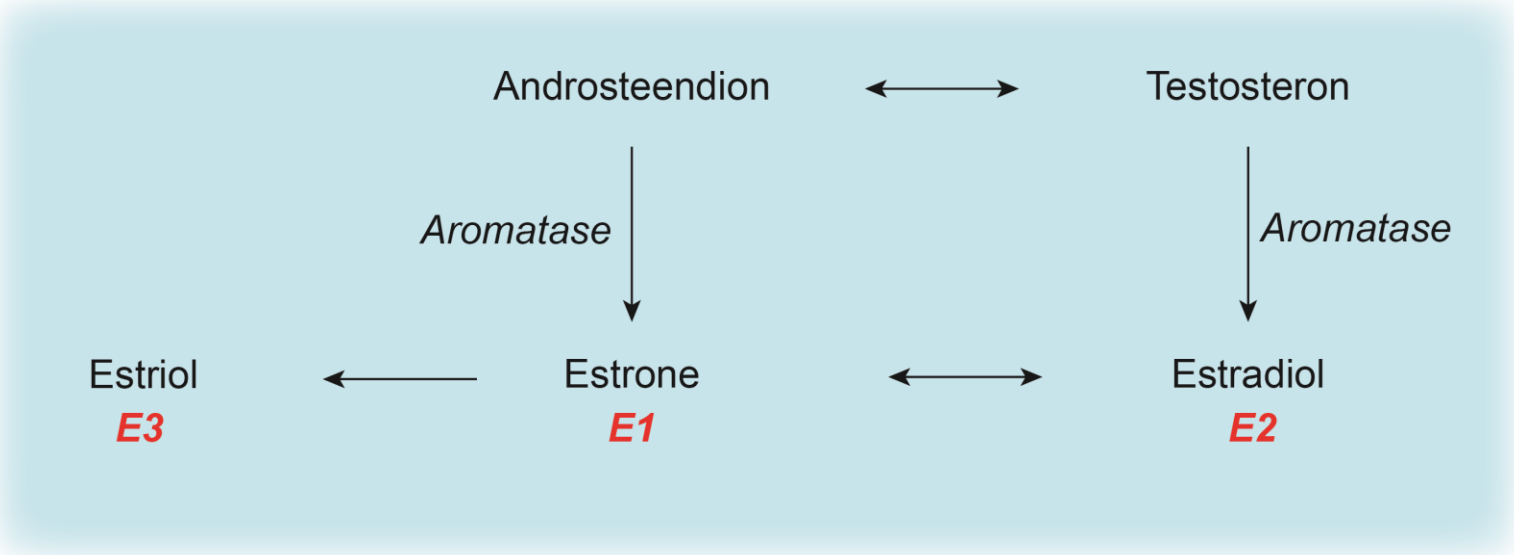
# Vaginale droogte

## Lokale hormonale behandeling - DHEA

- DHEA (Intrarosa)
  - Vaginale ovule, dagelijks
  - Inactieve precursor
  - Perifere activatie (aromatase)
  - Inactieve estradiol-metabolieten komen in circulatie
  - Geen verhoging van oestrogeenconcentratie in bloed
  - Geen aromatase in endometriumcellen
    - Geen endometriale stimulatie

# Vaginale droogte

## Lokale hormonale behandeling - Oestrogenen




- Oestrogenen: **voorkeur estriol (E3)**
  - Metabolisme
    - E1 & E2 reversibel gemetaboliseerd
    - E3 eindproduct
  - Pharmacokinetiek
    - Affiniteit voor nucleaire ER
      - E3 < E2 (10 times)
    - Nucleaire retentietijd van ER complex
      - E3-R < E2-R

# Vaginale droogte

## Lokale hormonale behandeling - oestrogenen

- Oestrogenen
  - Voorkeur estriol (E3)
  - Zo laag mogelijk!
  - Opties:
    - Aacifemine (creme 1mg/g, ovule 500µg estriol)
    - Blissel (gel 50µg/g estriol)
    - Oekolp (ovule 30µg estriol)
    - Vagifem (tablet, 10µg estradiol)
  - Steeds in overleg met behandelend borstkliniek-arts

# Voeding en antihormonale therapie

UZ GENT

UNIVERSITEIT GENT

# Voeding


# Voeding

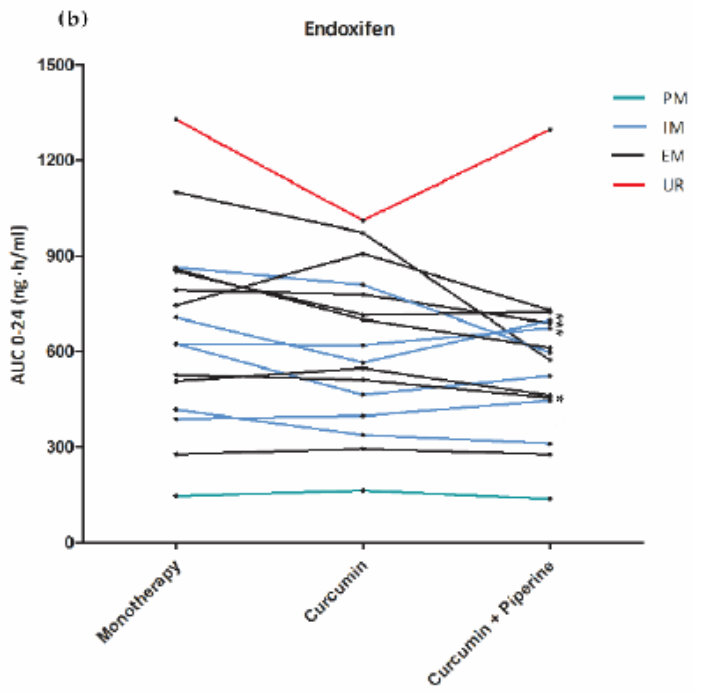
cancers

*Article*

## Impact of Curcumin (with or without Piperine) on the Pharmacokinetics of Tamoxifen

- 16 patiënten
- Drie maal daags 1200mg kurkuma

- Daling van actieve metabolieten van tamoxifen
  - Enkel in bepaalde subgroepen



# Voeding

- Supplementen af te raden
  - CYP-interactie
- Voedingsinname (kruiding)
  - weinig evidentie voor  tegenadvies

# Voeding


- Isoflavonen = phyto-oestrogenen
- Onduidelijke literatuur
- Supplementen worden afgeraden
  - Hoge dosis isoflavonen
- Voedingsinname weinig impakt
  - 2-3 eenheden per dag

# Voeding

Stichting tegen Kanker

ZOEKEN

ALLES OVER KANKER | PATIËNTENHULP | KANKERPREVENTIE | GEFINANCIERDE PROJECTEN | PROJECTOPROEPEN | STEUN ONS



## Wegwijzer voedingssupplementen

Ben je op zoek naar concrete informatie over het gebruik van voedingssupplementen (vitamines, kruiden, planten ...) tijdens een kankerbehandeling? Deze wegwijzer biedt een overzicht van 20 vaak gebruikte supplementen, hun toepassingen én de voor- en nadelen van hun gebruik.

Voor je voedingssupplementen inschakelt, raden we je aan onze belangrijke informatie over het gebruik ervan aandachtig te lezen. De overzichtstabel achter deze link toont ook hoe voedingssupplementen soms vriend én vijand kunnen zijn.

### Hoe gebruik je de applicatie?

### Zoeken op voedingssupplement:

- Maak je keuze in het rolmenu 'Kies een supplement'.
- Je krijgt als resultaat de volledige informatieve fiche voor jouw keuze onder het rolmenu.

### Zoeken op behandeling:

- Maak je keuze in het rolmenu 'Kies een behandeling'.
- Onder het rolmenu krijg je als resultaat alle supplementen uit onze lijst die een invloed - positief of negatief - kunnen hebben op de gekozen behandeling.
- Voor elk supplement kan je de volledige informatieve fiche aanklikken.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