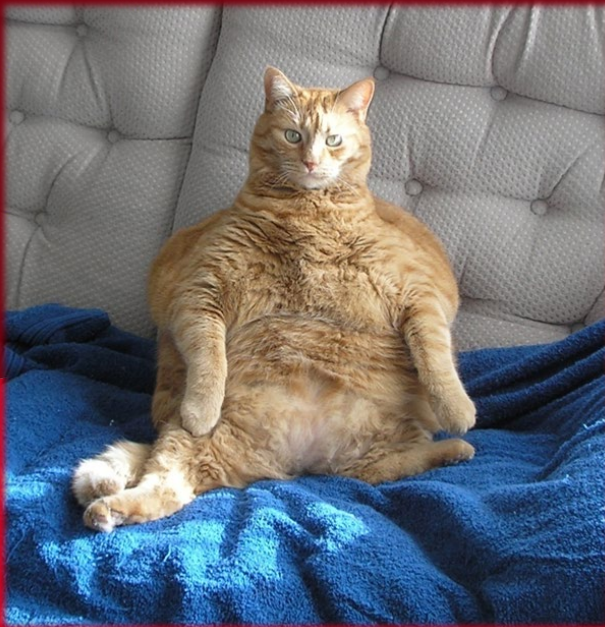


Kost , overvægt og prognose hos kræftpatienter - hvad er evidensen



Anja Olsen

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The Effect of Diet on Breast Cancer Recurrence: The DIANA-5 Randomized Trial



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ABSTRACT

Purpose: The DIANA-5 randomized controlled trial assessed the effectiveness of a diet based on Mediterranean and macrobiotic traditions (macro-Mediterranean diet) in reducing breast cancer recurrence.

Patients and Methods: The DIANA-5 study involved 1,542 patients with breast cancer at high risk of recurrence because of estrogen receptor–negative cancer, or metabolic syndrome, or high plasma levels of insulin or testosterone. Women were randomly assigned to an active dietary intervention (IG) or a control group (CG). Both groups received the 2007 American Institute for Cancer Research/World Cancer Research Fund recommendations for cancer prevention. The intervention consisted of meetings with kitchen classes, community meals, and dietary recommendations. Recommended foods included whole grain cereals, legumes, soy products, vegetables, fruit, nuts, olive oil, and fish. Foods to be avoided were refined products,

potatoes, sugar and desserts, red and processed meat, dairy products, and alcoholic drinks. A compliance Dietary Index was defined by the difference between recommended and discouraged foods.

Results: Over the 5 years of follow-up, 95 patients of the IG and 98 of the CG developed breast cancer recurrence [HR = 0.99; 95% confidence interval (CI): 0.69–1.40]. The analysis by compliance to the dietary recommendations (IG and CG together) showed that the women in the upper tertile of Dietary Index change had an HR of recurrence of 0.59 (95% CI: 0.36–0.92) compared with women in the lower tertile.

Conclusions: The DIANA-5 dietary intervention trial failed to show a reduction in breast cancer recurrence, although self-reported diet at year 1 in IG and CG combined showed a protective association with the higher Dietary Index change.

See related commentary by McTiernan, p. 931

Introduction

The incidence of breast cancer and the number of survivors continue to grow, with many countries including the United States, Canada, Australia, Japan, and several European countries reporting 85%–90% 5-year survival rates for women diagnosed between 2010 and 2014 (1). Despite these large and growing population benefits from novel interventions aimed at supporting health during treatments and survivorship, an important proportion of breast cancer women still die from it, and survivors suffer from comorbidities that affect not only the probability of dying from other causes but also of dying from breast cancer.

Prospective epidemiologic studies showed that overweight (2) and markers of insulin resistance such as high serum levels of glucose (3), insulin (4), and testosterone (5, 6) are associated with a significantly increased risk of breast cancer recurrence, both before and after menopause. Consistently, metabolic syndrome [defined as the presence of three or more of the following: abdominal obesity, hypertension, hyperglycemia, high triglycerides, and low high-density lipoprotein (HDL) cholesterol values] is associated with a higher recurrence rate in breast cancer women (6).

There is increasing observational and experimental evidence that improving diet and lifestyle favorably modifies these metabolic and hormonal prognostic factors for breast cancer. The Mediterranean diet, which is largely based on unrefined cereal products (mainly bread and pasta), pulses, vegetables, olive oil, nuts, fruit, moderate wine, occasionally fish and cheese and rarely other animal products, improves body composition, insulin sensitivity, lipid profile, and it is associated with a lower cumulative incidence of metabolic syndrome (7–10).

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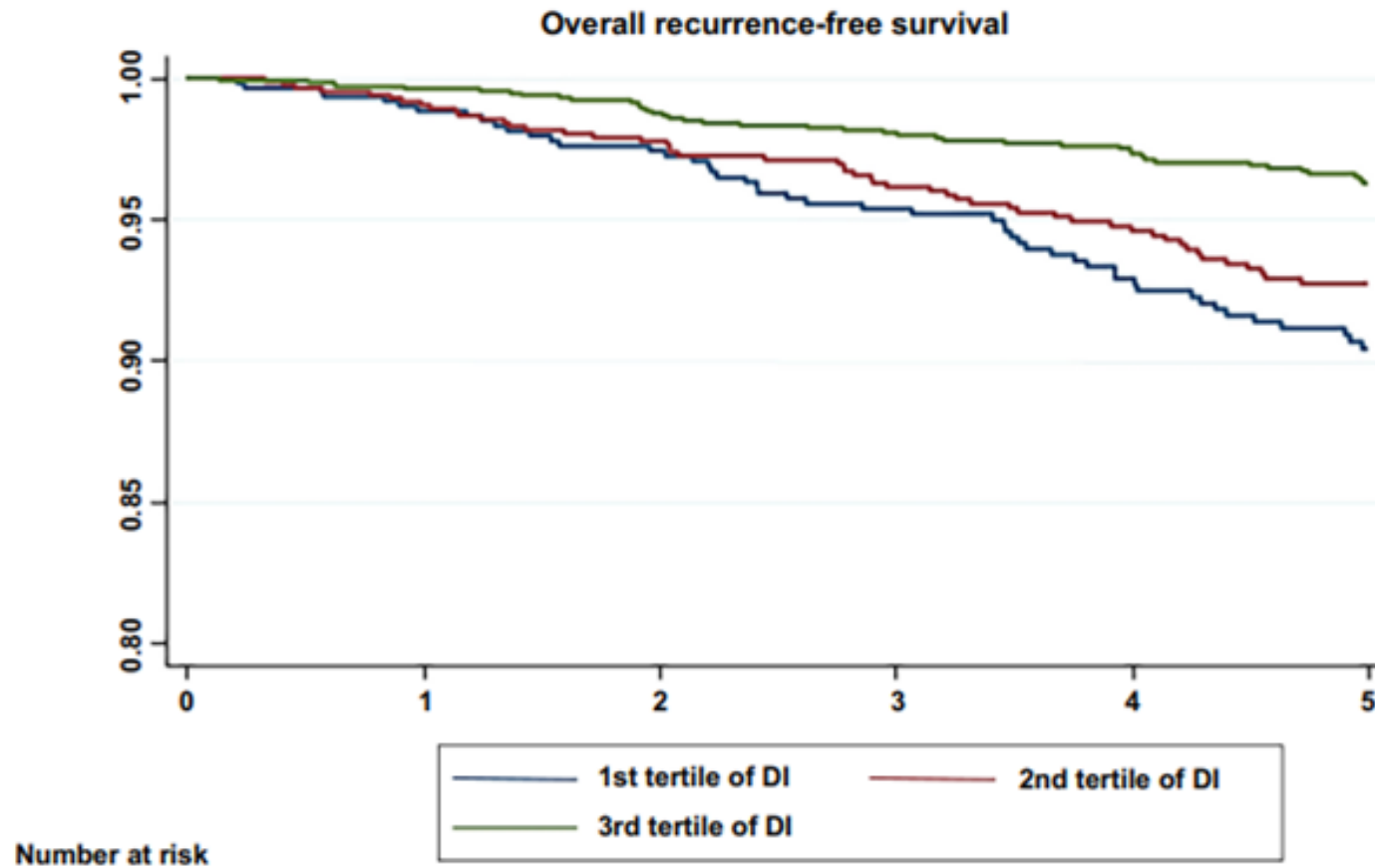
doi: 10.1158/1078-0432.CCR-23-1615

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- 1,542 stadie I-III brystkræftpatienter
- 35-70 år
- Høj risiko for recurrence (ER-, metabolisk syndrom)
- Intervention: Vejledning om kost og fysisk aktivitet
- 5 års opfølgning



Berrino et al. 2024



Systematic Review

Post-Diagnosis Dietary Patterns among Cancer Survivors in Relation to All-Cause Mortality and Cancer-Specific Mortality: A Systematic Review and Meta-Analysis of Cohort Studies

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Abstract: The role of overall diet on longevity among cancer survivors (CS) needs further elucidation. We performed a systematic review of the literature and a meta-analysis of related cohort studies published up to October 2022 investigating post-diagnosis a priori (diet quality indices) and a posteriori (data-driven) dietary patterns (DPs) in relation to all-cause and cancer-specific mortality. Pooled hazard ratios (HRs) and 95% confidence intervals (CIs) were estimated using random-effects meta-analyses comparing highest versus lowest categories of adherence to DPs. We assessed heterogeneity and risk of bias in the selected studies. A total of 19 cohort studies with 38,846 adult CS, some assessing various DPs, were included in the meta-analyses. Higher adherence to a priori DPs was associated with lower all-cause mortality by 22% (HR = 0.78, 95% CI: 0.73–0.83, $I^2 = 22.6\%$) among all CS, by 22% (HR = 0.78, 95% CI: 0.73–0.84, $I^2 = 0\%$) among breast CS and by 27% (HR = 0.73, 95% CI: 0.62–0.86, $I^2 = 41.4\%$) among colorectal CS. Higher adherence to a “prudent/healthy” DP was associated with lower all-cause mortality (HR = 0.79, 95% CI: 0.64–0.97 $I^2 = 49.3\%$), whereas higher adherence to a “western/unhealthy” DP was associated with increased all-cause mortality (HR = 1.48, 95% CI: 1.26–1.74, $I^2 = 0\%$) among all CS. Results for cancer-specific mortality were less clear. In conclusion, higher adherence to a “healthy” DP, either a priori or a posteriori, was inversely associated with all-cause mortality among CS. A “healthy” overall diet after cancer diagnosis could protect and promote longevity and well-being.

Keywords: dietary patterns; cancer survivors; a priori dietary patterns; a posteriori dietary patterns; overall diet; all-cause mortality; cancer-specific mortality; survival; meta-analysis



Citation: Spei, M.-E.; Bellos, I.; Samoli, E.; Benetou, V. Post-Diagnosis Dietary Patterns among Cancer Survivors in Relation to All-Cause Mortality and Cancer-Specific Mortality: A Systematic Review and Meta-Analysis of Cohort Studies. *Nutrients* **2023**, *15*, 3860. <https://doi.org/10.3390/nu15173860>

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1. Introduction

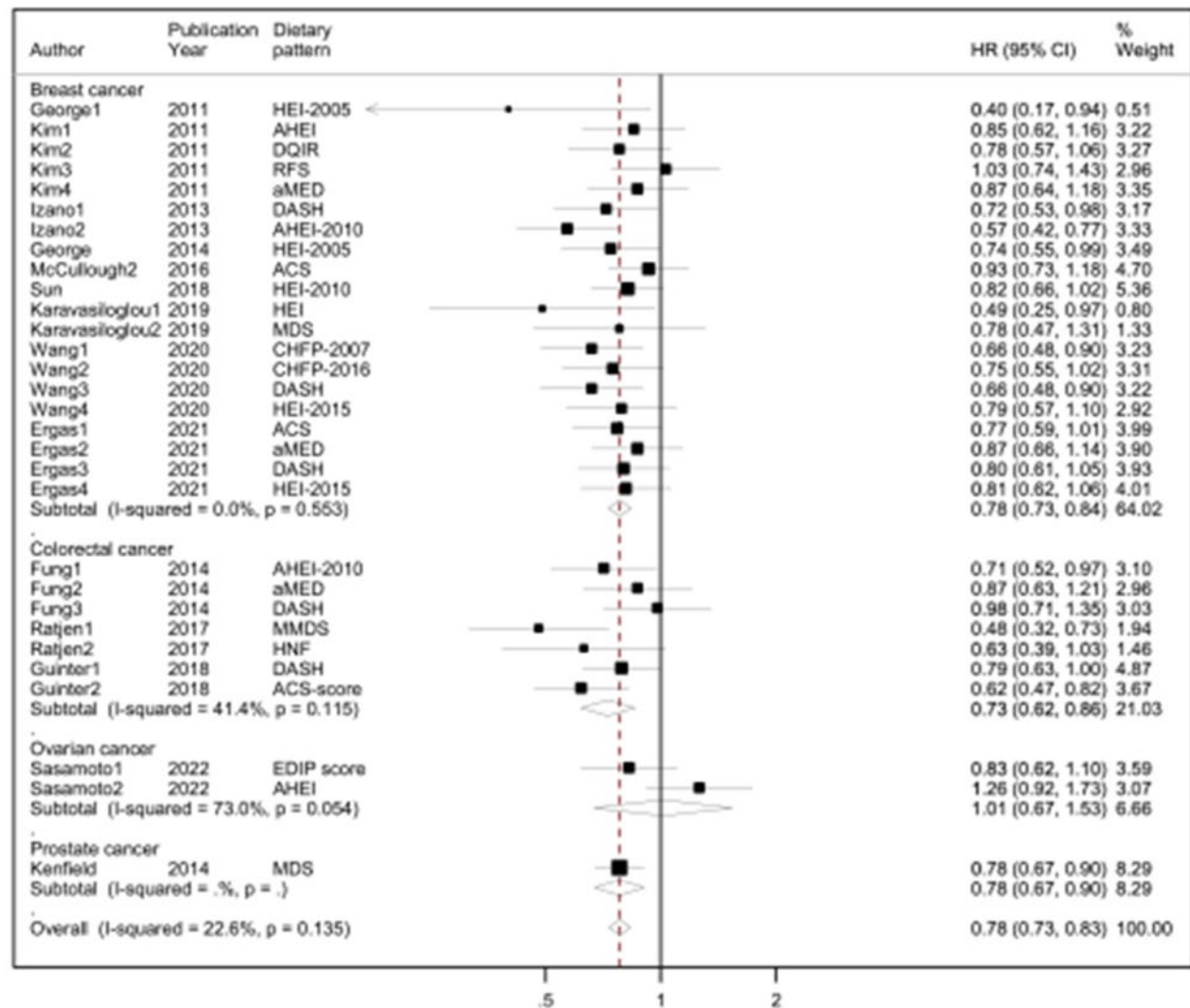
Cancer survivors form a fast-growing segment of the population worldwide. In 2018, 43.8 million people were diagnosed with cancer within the previous five years [1]. Although improvement in cancer survival, observed during the past decades for many cancer sites, is considered a great achievement, cancer survivors have important concerns and face several challenges, such as the late and long-term effects of cancer and its treatment on their survival and quality of life [2,3].

Lifestyle habits and modifications related to a healthy diet and regular physical activity after cancer diagnosis are potentially important behaviors through which cancer survivors could protect and promote their well-being and longevity [4,5].

Several studies among cancer survivors have highlighted that their diet is often characterized by poor dietary habits, unfavorable consumption of specific food groups or nutrients, such as low intake of whole grains and healthy fatty acids, unwanted weight gain and overuse of dietary supplements [6–10]. Furthermore, cancer survivors have consistently expressed their need for additional nutrition guidance and focused dietary advice [11]. Due to a lack of sufficient evidence and shortage of studies conducted among cancer

Sundt kostmønster - død

Sund kost



Kost efter diagnose - død

”Vestlig kost”

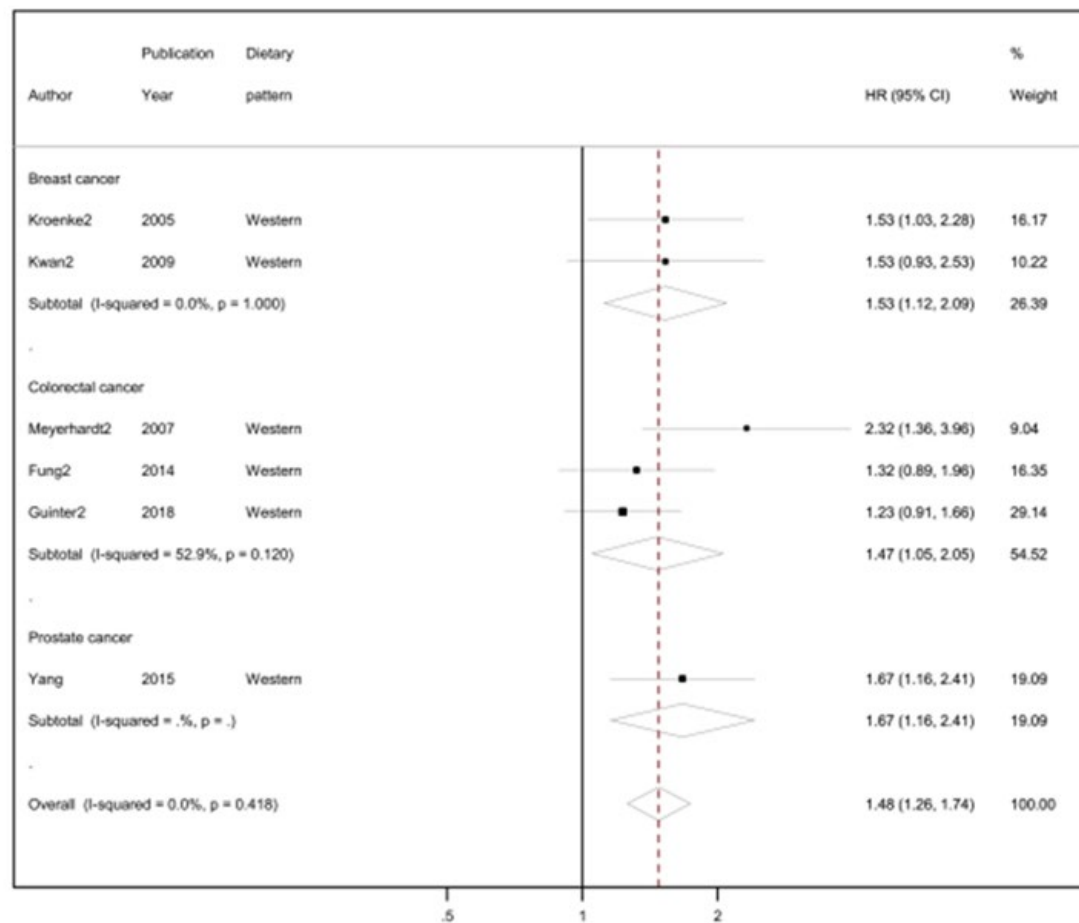


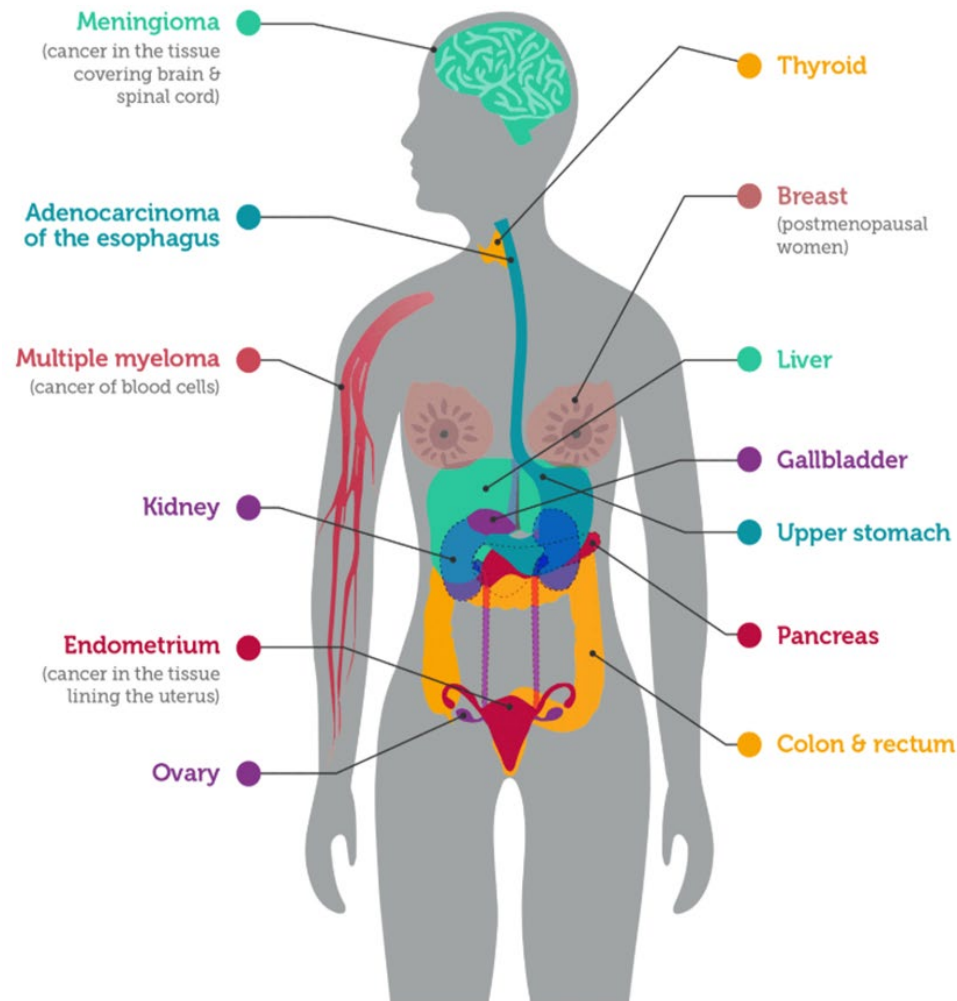
Figure 4. Forest plot showing the association between highest versus lowest adherence to “western/unhealthy” dietary patterns with all-cause mortality by cancer site and overall, among cancer survivors.





Status for evidens til kræft

Cancers Associated with Overweight & Obesity



European Obesity Report, 2022:
..it is predicted that obesity will overtake smoking as the main risk factor for preventable cancer in the coming decade in some countries...



BMI og prognose efter brystkræft


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DOI: 10.1002/ijc.34322

SPECIAL REPORT

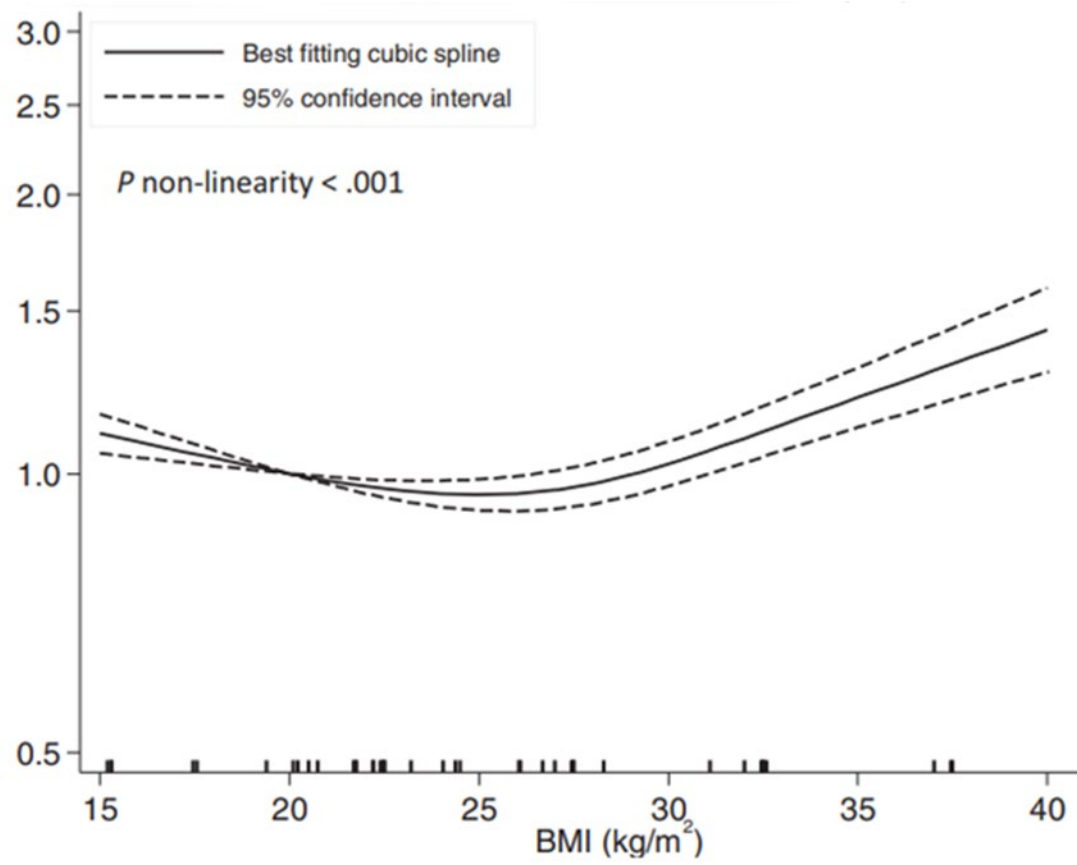
IJC INTERNATIONAL
JOURNAL OF CANCER 

Postdiagnosis body fatness, weight change and breast cancer prognosis: Global Cancer Update Program (CUP global) systematic literature review and meta-analysis

Doris S.M. Chan¹  | Rita Vieira¹ | Leila Abar¹ | Dagfinn Aune^{1,2,3,4} |
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Ellen Kampman¹² | Vivien Lund¹³ | Kate Allen¹³ | Nigel T. Brockton¹⁴ |
Helen Croker¹³ | Daphne Katsikioti¹³ | Deirdre McGinley-Gieser¹⁴ |
Panagiota Mitrou¹³ | Martin Wiseman¹³ | Amanda J. Cross¹ | Elio Riboli¹ |
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Konstantinos K. Tsilidis^{1,6} 



BMI og prognose efter brystkræft

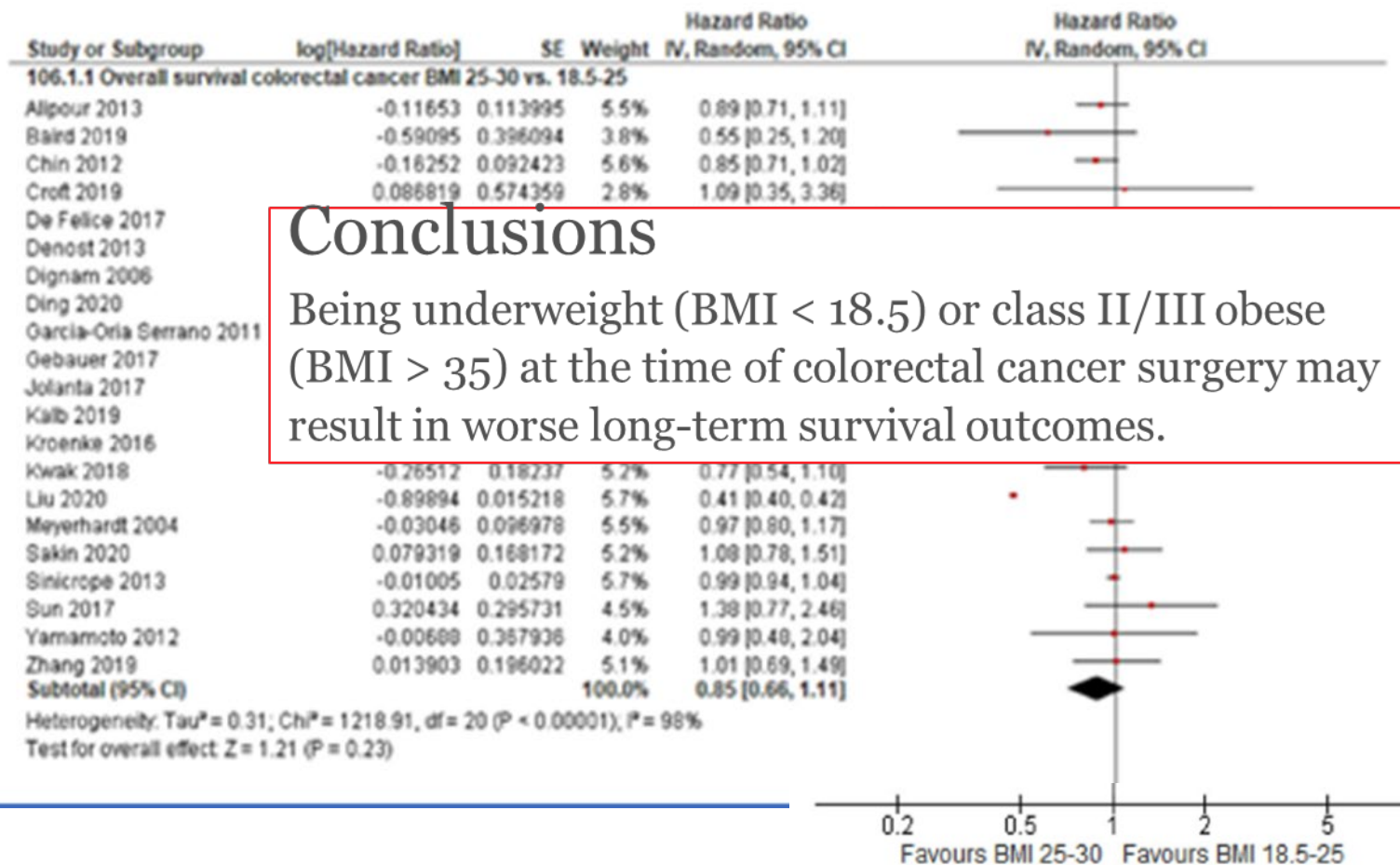


Overall mortality



Bmi efter operation og prognose efter CRC

Endpoint : Død



Conclusions

Being underweight (BMI < 18.5) or class II/III obese (BMI > 35) at the time of colorectal cancer surgery may result in worse long-term survival outcomes.



BMI ved diagnose og prognose efter lungekræft

Endpoint : Død, BMI>25

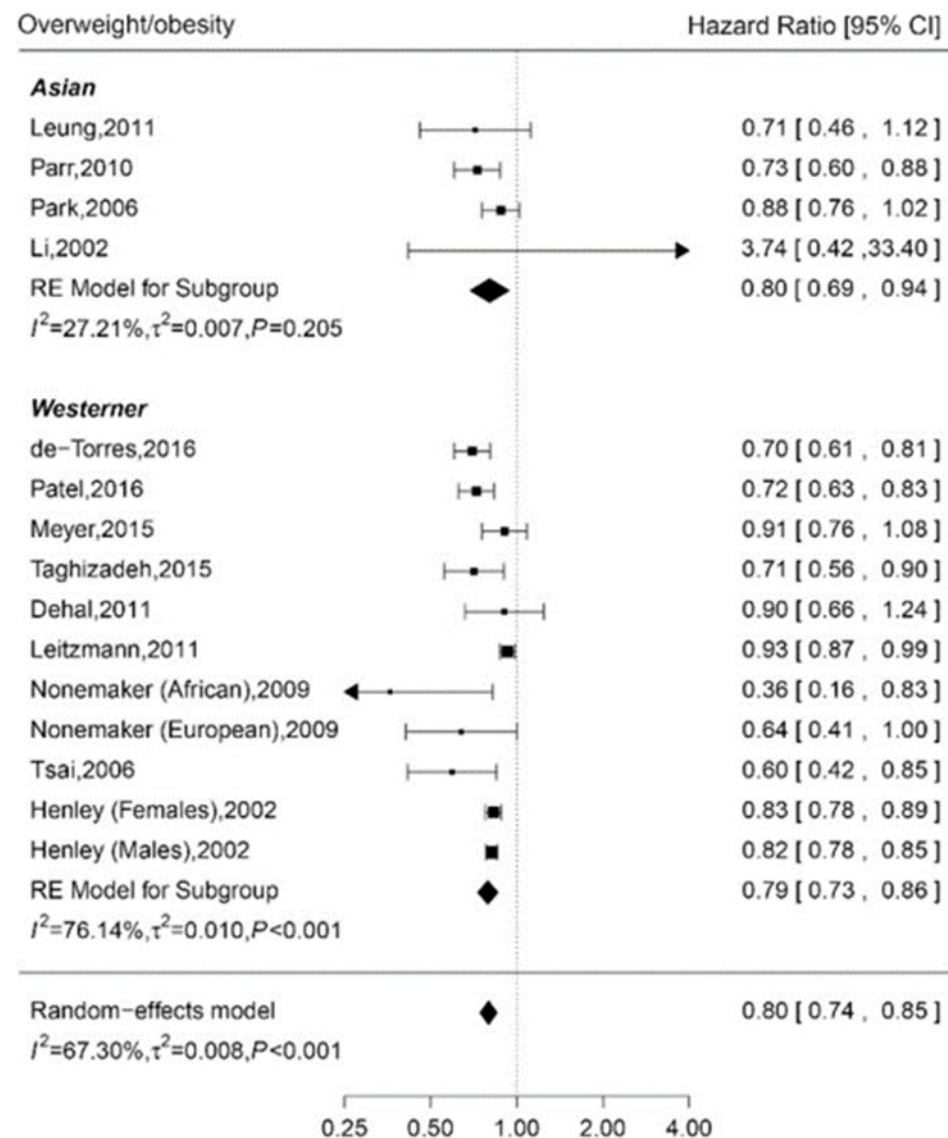
European Journal of Clinical Nutrition
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REVIEW
Body mass index and lung cancer mortality: a systematic review and meta-analysis

J Wang^{1,2,7}, H Xu^{3,7}, S Zhou⁴, D Wang⁵, Y Zhang⁶, J Li⁷, J Zhang⁸, J Zhang⁹, J Zhang¹⁰, J Zhang¹¹, J Zhang¹², J Zhang¹³, J Zhang¹⁴, J Zhang¹⁵, J Zhang¹⁶, J Zhang¹⁷, J Zhang¹⁸, J Zhang¹⁹, J Zhang²⁰

Studies examining the relation of BMI and lung cancer mortality were identified from PubMed and EMBASE were searched to identify relevant articles from 51 studies involving 1,234,567 individuals. High BMI decreased risk of death from lung cancer-specific mortality (HR = 0.88, 95% CI 0.76–1.02, $P < 0.01$). When stratifying by ethnicity, the risk of lung cancer-specific mortality was lower in Westerners ($P = 0.51$ and $P = 0.53$, respectively) than those with a lower BMI. Consider these findings.

European Journal of Clinical Nutrition



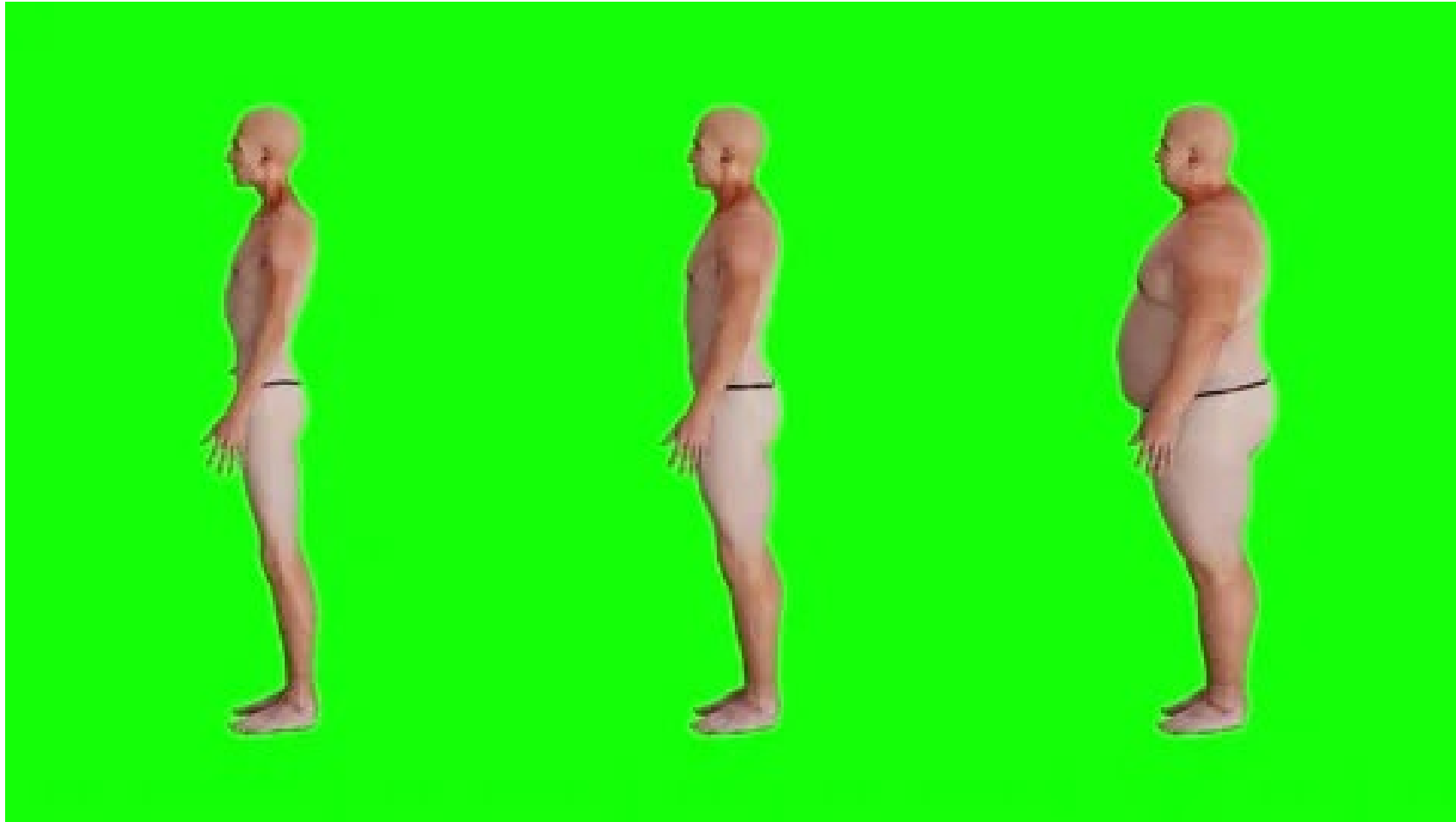
Overvægt/fedme og prognose kræft

- Brystkræft – dårligere prognose
- Colorectalkræft – både og
- Lungekræft – bedre prognose

- Hvorfor?



En kræftpatient er ikke en kræftpatient



5 års overlevelse

Kræftform	5-årsoverlevelse	
	Mænd	Kvinder
Brystkræft	87%*	82%
Lungekræft	9%	12%
Prostatakræft	55%	27%
Tyktarmkræft	15%	15%
Modermærkekræft	83%	91%
Blærekræft	70%	61%
Livmoderhalskræft	-	64%
Kræft i bugspytkirtlen	4%	5%

*sjælden kræftform hos mænd

Reverse causation

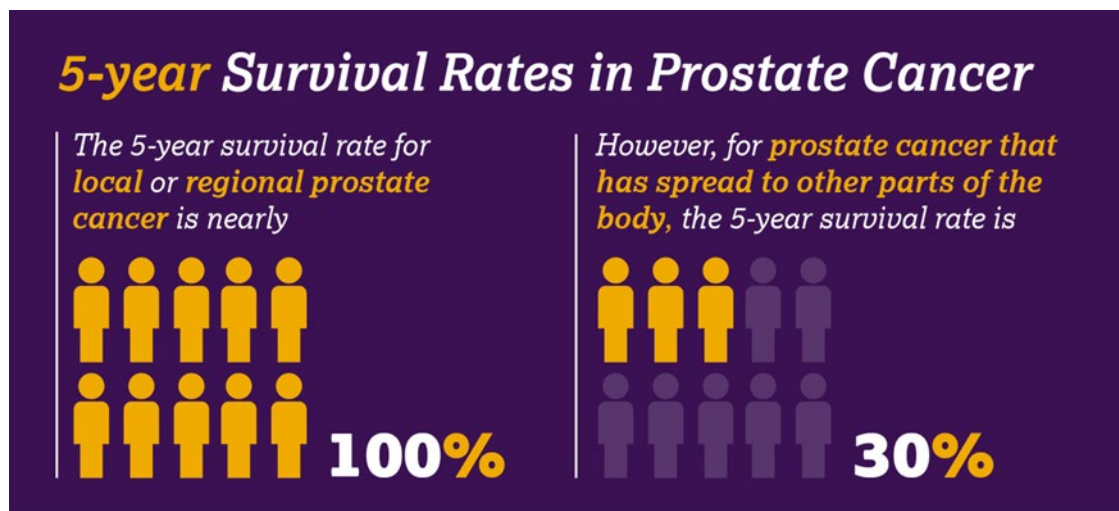


Metodologiske udfordringer

Prognose

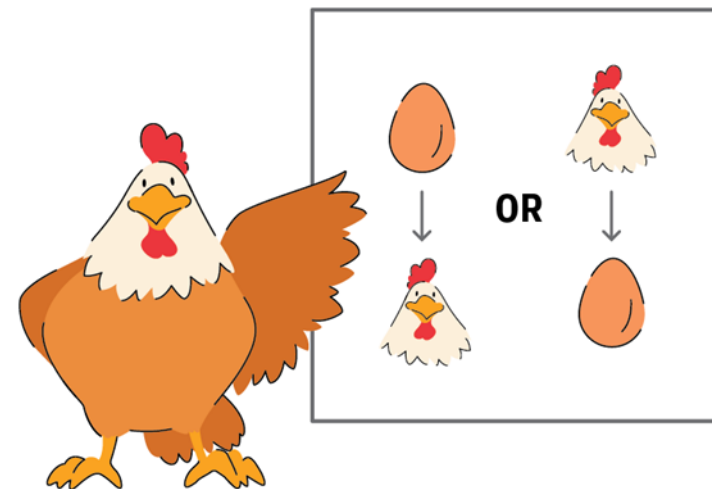
Hvor homogene er patienterne?

Reverse causation



Document ID: Z4-18138 | Date of preparation: July 2019 | Date of expiry: July 2021
Reference: Cancer Net, 2019, Prostate Cancer - Statistics. Available at: <https://www.cancer.net/cancer-types/prostate-cancer/statistics> [Accessed Jul 2019].

AstraZeneca



Insulinresistens og prognose?



−3.04, −2.12, $p < .01$). Heterogeneity among the included studies was insignificant ($p = .27$).

Interpretation: These findings suggest that patients with a cancer diagnosis are markedly insulin resistant. As metabolic dysfunction in patients with cancer associates with increased recurrence and reduced overall survival, future studies should address if ameliorating insulin resistance in this population can improve these outcomes thereby improving patient care.

KEY POINTS

- Metabolic dysfunction increases cancer recurrence rates and reduces survival for patients with cancer.
- Insulin resistance is a critical cause of metabolic dysfunctions.
- To date, no comprehensive compilation of research investigating insulin resistance in cancer patients has been produced.
- In this meta-analysis, we found that patients with various cancers were markedly insulin-resistant.

(95% CI) was 7.5 mg/kg/min in control subjects ($n = 154$), and 4.7 mg/kg/min in patients with a cancer diagnosis ($n = 187$). Thus, the 95% CI mean difference was -2.61 mg/kg/min (95% confidence interval, -3.04 – -2.19 ; $p < .01$). Heterogeneity among the included studies was insignificant ($p = .27$).

Interpretation: These findings suggest that patients with a cancer diagnosis are markedly insulin resistant. As metabolic dysfunction in patients with cancer associates with increased recurrence and reduced overall survival, future studies should address if ameliorating insulin resistance in this population can improve these outcomes thereby improving patient care.

KEY POINTS

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- To date, no comprehensive compilation of research investigating insulin resistance in cancer patients has been produced.
- In this meta-analysis, we found that patients with various cancers were markedly insulin resistant.



Kost, overvægt og prognose hos kræftpatienter

Opsummering

- Stadig få studier på kræftoverlevende/patienter
- Generel "sund kost" og "sund vægt" er bedste bud, men hvorfor?
 - Bedre fysik til at klare behandling
 - Nedsat komorbiditet
 - Bedre livskvalitet – både fysisk og kognitivt
- Ingen dokumentation for, at særlige kure er gavnlige
- Patienternes metaboliske tilstand

