

# A Longitudinal Assessment on the Impact of Higher Body Mass Index on Cancer-Related Fatigue in Breast Cancer Patients

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**2018**

**28-30 JUNE  
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SUPPORTIVE CARE IN CANCER



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## Faculty Disclosure

<input checked="" type="checkbox"/>	No, nothing to disclose
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<i>Company Name</i>	<i>Honoraria/ Expenses</i>	<i>Consulting/ Advisory Board</i>	<i>Funded Research</i>	<i>Royalties/ Patent</i>	<i>Stock Options</i>	<i>Ownership/ Equity Position</i>	<i>Employee</i>	<i>Other (please specify)</i>



# INTRODUCTION



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## Obese patients w/ breast cancer:

↑ Chronic low-grade inflammation

↓ Functionality & QOL

↑ All-cause mortality

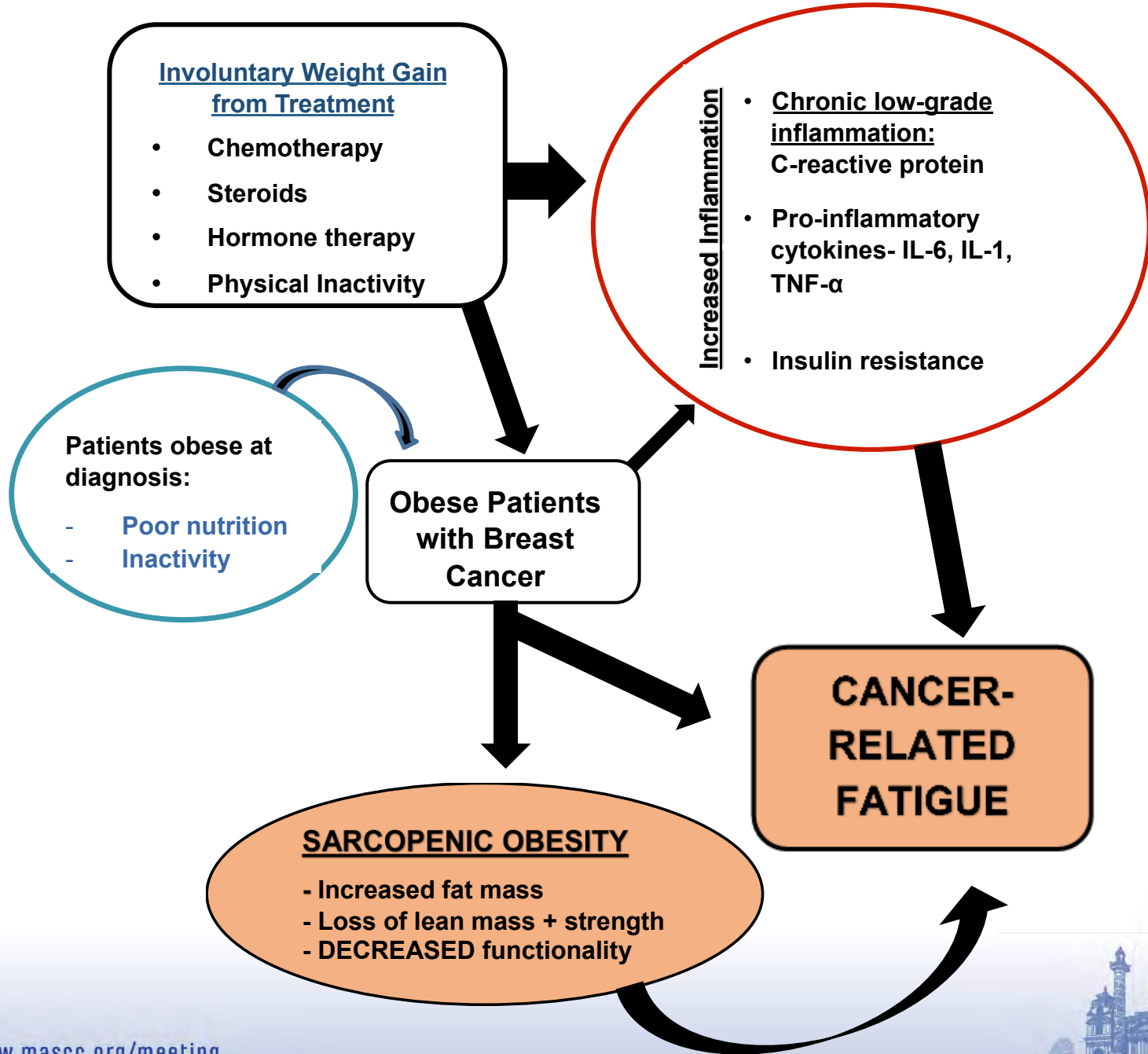
## Increased inflammation is also assoc. w/ greater levels cancer-related fatigue:

- Most distressing symptom of cancer + cancer treatment, up to 10 yrs.
- Not relieved by sleep/rest.





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# Specific Aim

To evaluate the impact of obesity on CRF in breast cancer patients through a secondary analysis of a prospective study of breast cancer patients beginning chemotherapy.



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# Schema

## Cross-Sectional Study

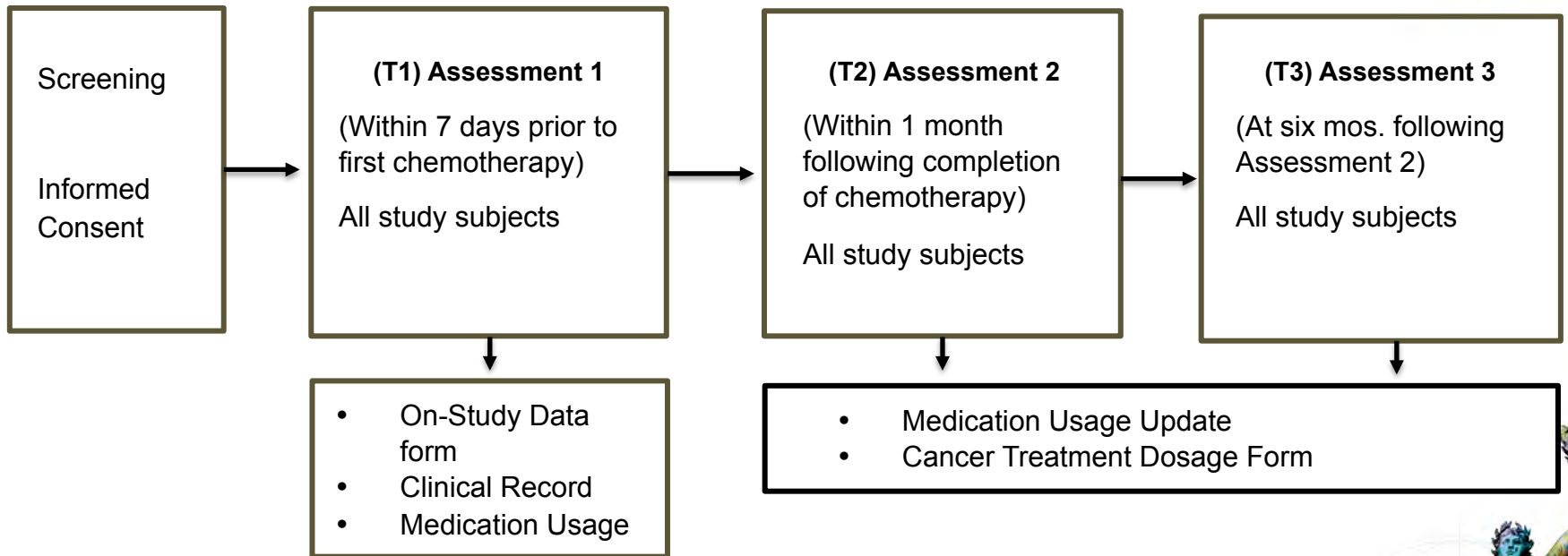
### Large Nationwide Sample



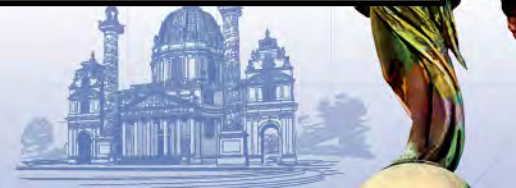
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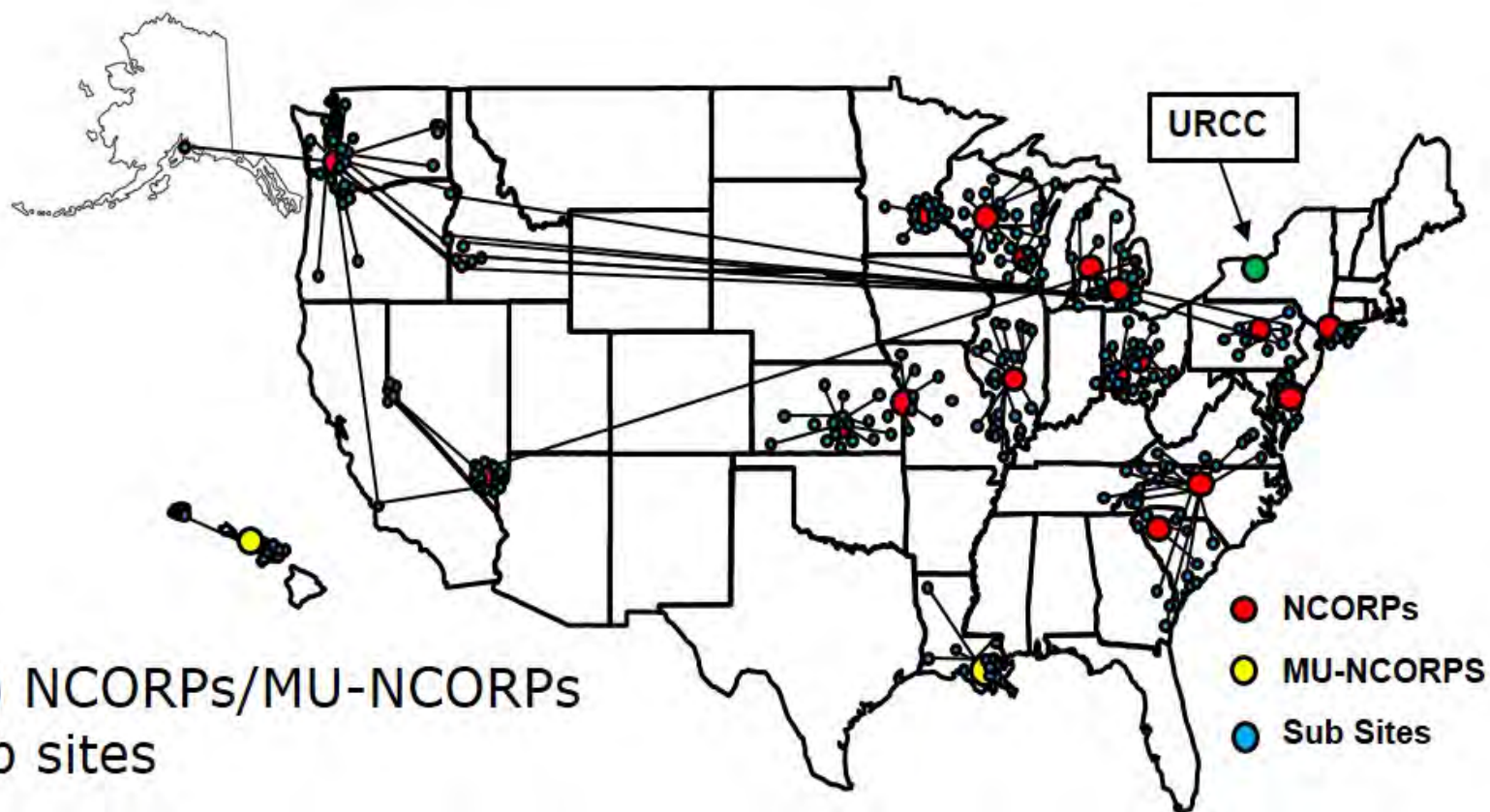
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- Self Report Measures (*At clinic or home*)
  - **Symptom Inventory** (Single items related to memory, executive function, attention, etc.)
  - **MFSI** (fatigue)



# URCC NCORP Research Base Clinical Trial Network





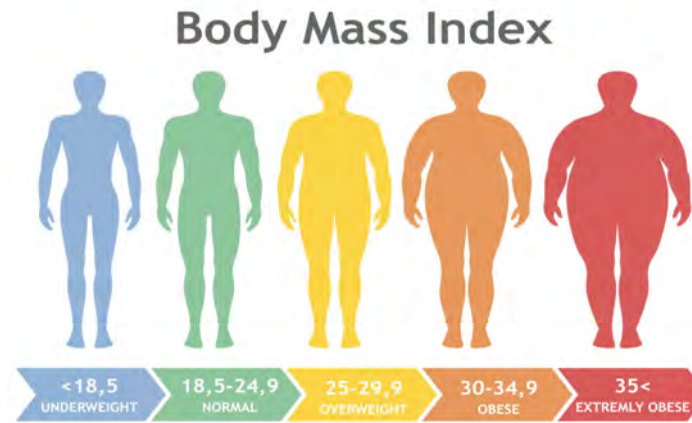
# Demographics Table (N=571)

<b>Variables</b>	<b>Normal (n=129)</b>	<b>Overweight (n=147)</b>	<b>Obese (n=294)</b>
<b>Body Mass Index, (mean, SD)</b>	22.51±1.66**	27.47±1.41	36.80±5.84**
<b>Age</b>	51.81±10.97	53.8±10.97	54.19±10.18
<b>Race (n, %): White</b>	119 (92%)	135 (91.8%)	253 (86%)
<b>Other</b>	10 (8%)	12 (8.2%)	41 (14%)
<b>Premenopausal</b>	62 (48%)*	48 (33%)*	110 (37.4%)*
<b>Postmenopausal</b>	64 (50%)*	99 (67%)*	184 (62.5%)*
<b>Unknown</b>	3 (2%)	-	-
<b>Stage 1</b>	31 (24%)	43 (29.3%)	81 (27.6%)
<b>Stage 2</b>	62 (48%)	70 (47.6%)	142 (48%)
<b>Stage 3</b>	22 (17%)	29 (19.7%)	56 (19%)
<b>Unknown</b>	14 (11%)	5 (3.4%)	15 (5%)
<b>Radiation</b>	69 (53.5%)	92 (63%)	168 (57%)

\*p-value significant <.05, \*\*p-value significant <.0001



# METHODS

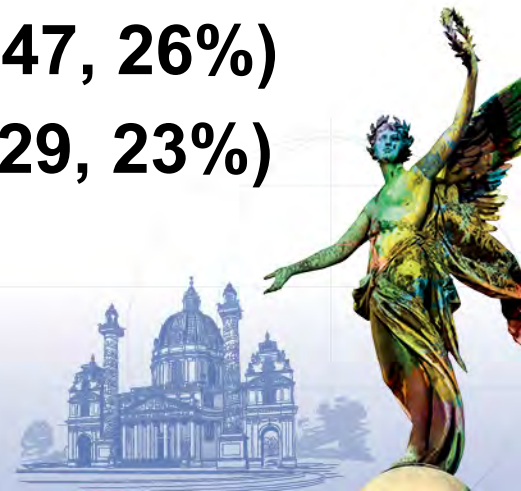


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**571 female breast cancer patients, aged  $53 \pm 10.61$**

**T1. Categorized by BMI:**

- Obese (OB:  $\geq 30.0$  kg/m<sup>2</sup>; n=294, 51%)
- Overweight (OV: 25.0-29.9 kg/m<sup>2</sup>; n=147, 26%)
- Normal wt. (NW: 18.5-24.9 kg/m<sup>2</sup>; n=129, 23%)



# METHODS



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## Cancer-Related Fatigue Symptoms:

**Multidimensional Fatigue Symptom  
Inventory (MFSI) + Symptom Inventory (SI)  
at T1, T2 & T3.**



# Results



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## T1. Obese higher CRF than normal wt:

- MFSI Total: OB = 11.4 vs NW = 8.1;  $p=0.03$
- SI Fatigue: OB = 3.5 vs NW = 2.9;  $p=0.02$

## T2. Higher SI Fatigue scores for obese than normal wt:

- OB = 4.4 vs NW = 3.8;  $p=0.02$

## T1-T3. Obese maintained more severe MFSI scores:

- General, Mental & Emotional subscales ( $p<0.05$ ).



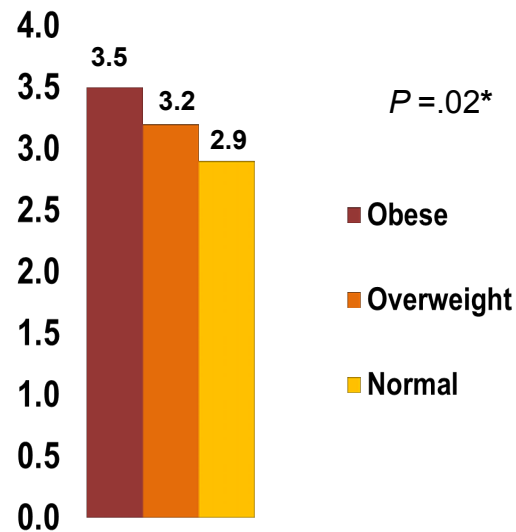
# RESULTS



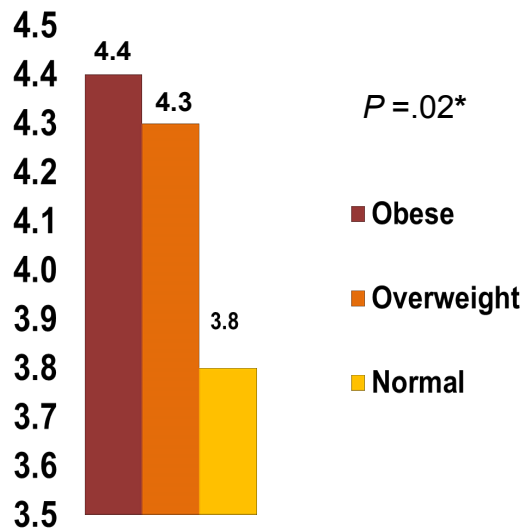
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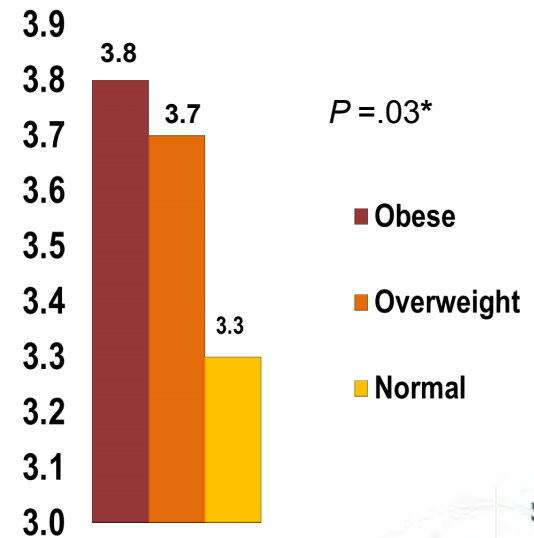
## T1. SI Fatigue



## T2. SI Fatigue



## T3. SI Fatigue



\* $P$ -value obese vs. normal weight subjects



# Summary

A cross-sectional analysis from a longitudinal prospective study: Obese breast cancer patients suffered greater fatigue than normal weight subjects

- T1
- T2
- T3



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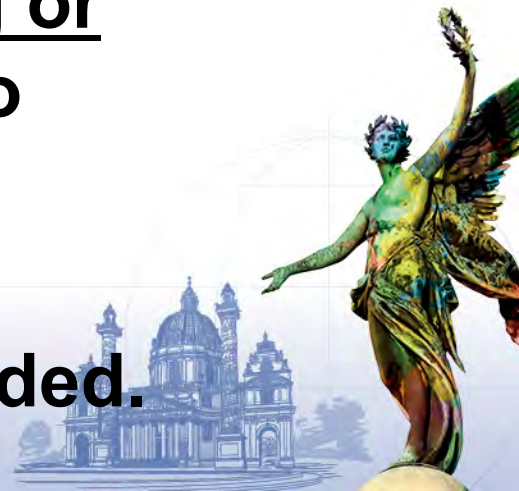




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# DISCUSSION

- In our study, obese breast cancer patients suffered greater fatigue than normal weight patients.
- Chronic low grade inflammation, sarcopenic obesity & loss of function.
- Diet/Wt. loss interventions preceding or combined w/exercise interventions to address fatigue
- More Phase 1-3 clinical trials are needed.

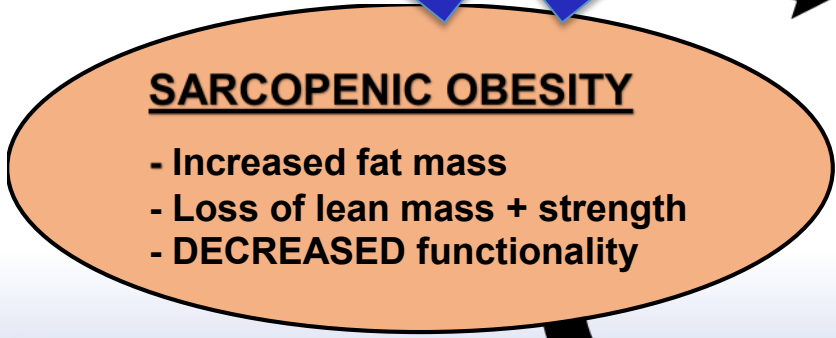
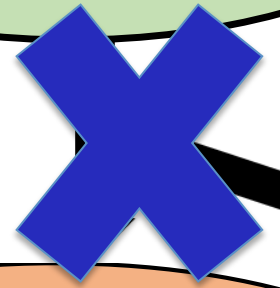
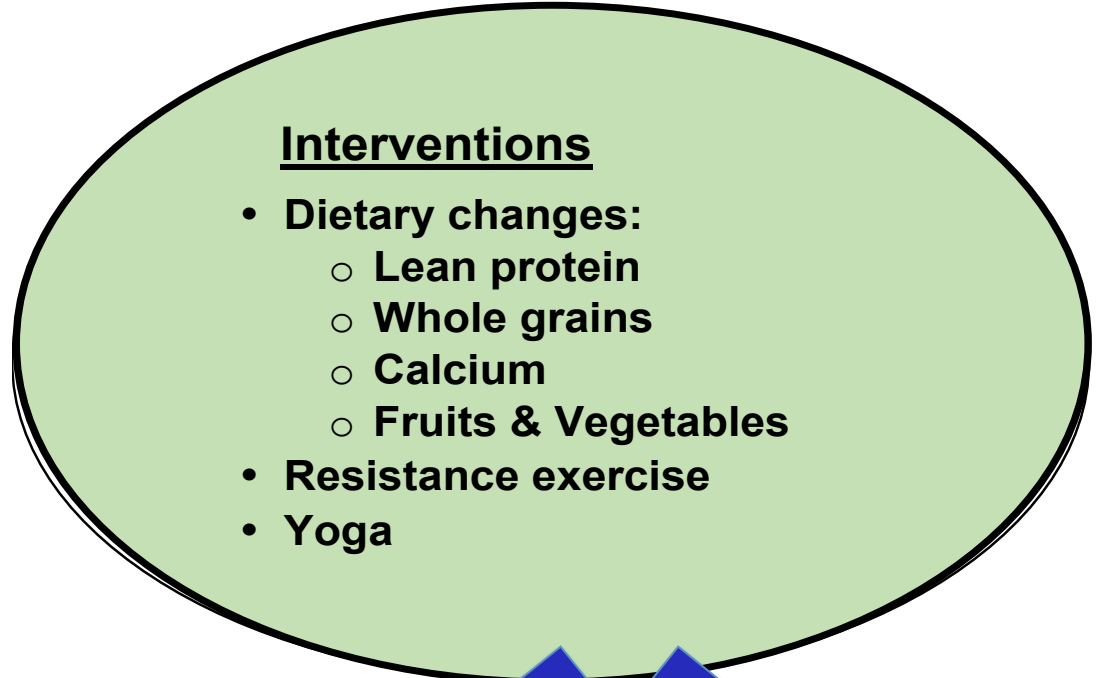




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# Future Research Direction



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- **Pilot Study:** proprietary functional food bar, guarana + protein powder for cancer survivors to improve energy and lean mass
- **Cancer-related fatigue** interventions combining exercise w/nutrition.
- Future K-award – possibly combined modality



# Questions?



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# Acknowledgments



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