

*WHI Participant Webinar  
April 21, 2021*

# **What you eat matters!**

## **Results of the WHI Dietary Modification Trial**

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# Thank you!

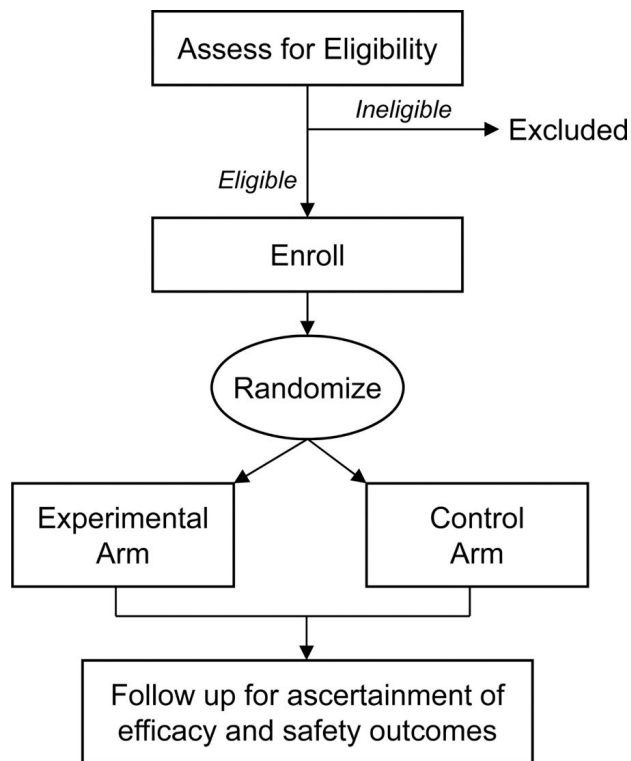
Your participation and hard work has helped us understand better the importance of nutrition in women's health.

Nutrition is one of the most important parts of our lives to study.

The food we eat affects every cell and organ system in our bodies.



# Studying diet and health with scientific rigor



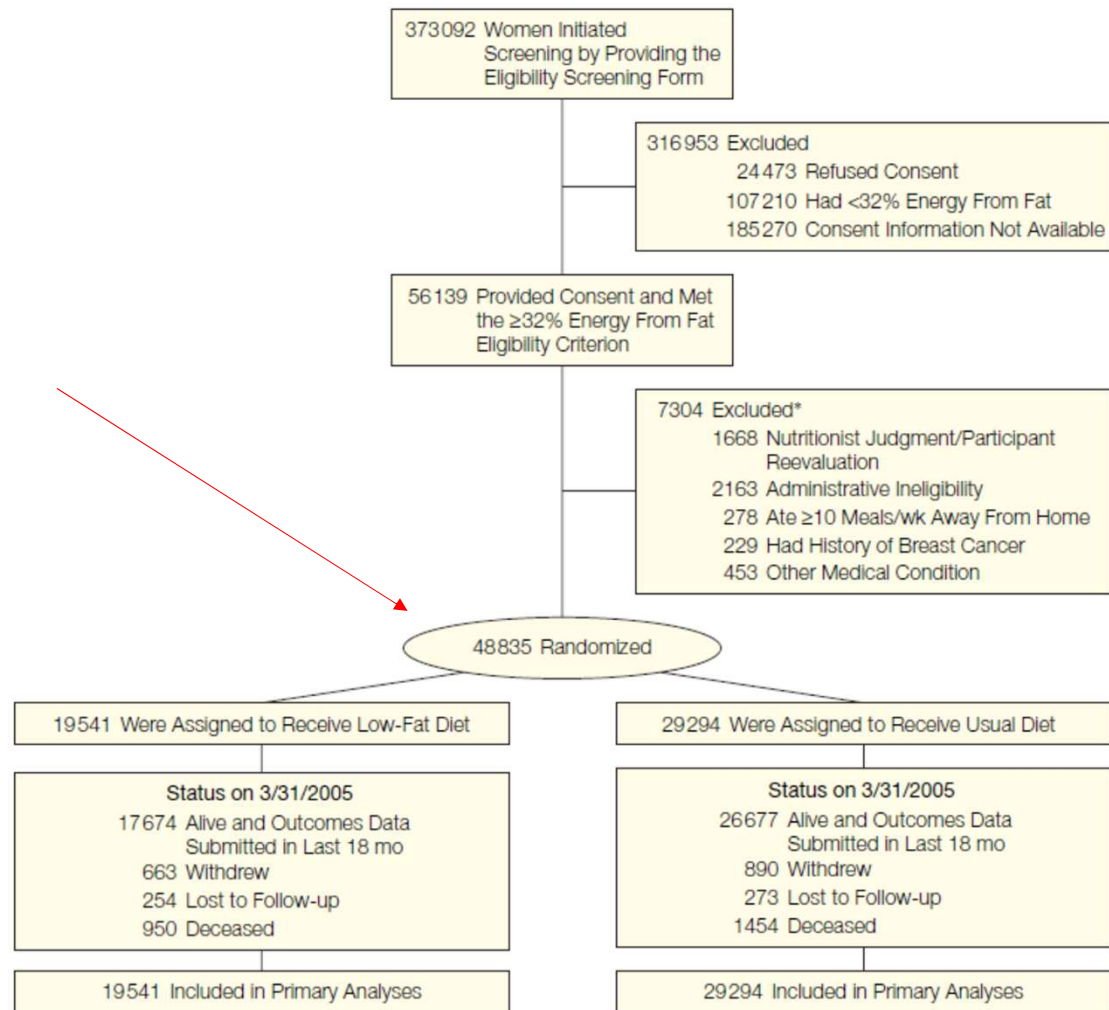
We wanted to study nutrition with the same scientific rigor that was done in the WHI hormone trials.

Randomized controlled trials are a study design that allows us to obtain scientific rigor.

The difference for the DM was that the intervention was dietary modification instead of a pill and the control arm was 'usual diet' instead of a placebo pill.



# The WHI Dietary Modification Trial



# What did the WHI-DM study?

The WHI scientists studied whether a low-fat diet would reduce breast and colorectal cancer in postmenopausal women, and possibly reduce cardiovascular disease.

The scientists expected that breast cancer incidence would be about 14% lower in the diet-change group compared to the no diet change group.

3 ways that diet was changed:

- 20% of daily calories from fat
  - *cutting fat in half*
- $\geq 5$  fruits and vegetables/day
- $\geq 6$  servings of grains/day



# Thank you for your hard work and commitment in the WHI-DM!

- Participants attended:
  - 18 group sessions in the first year
  - Quarterly sessions thereafter
  - Personal contacts with WHI staff
- All this time...learning how to change what you ate, how you cooked, keeping records, counting fat grams & helping each other.





# What did you help us learn?

- Diet change is possible and can be maintained over many years!
  - Eating is *more* than nourishing our bodies – it is also celebrations family time and restaurant eating – change benefits from many approaches (classes, individual contact, group support)
  - *You* taught us that this type of study is possible
- Changing diet and how one shops and cooks in many ways is harder than taking a pill, like in the other WHI clinical trials
  - We learned from you that a lot of contact and input was helpful. It was easier for women to get to the fat goals when they attended most of the sessions and did self-monitoring
- *Self monitoring was key* – and is now known to predict success in other types of diet change such as weight loss
  - WHI DM participants played a role in that discovery!



# What were the scientific results?

As you view these results on the next several slides keep in mind:

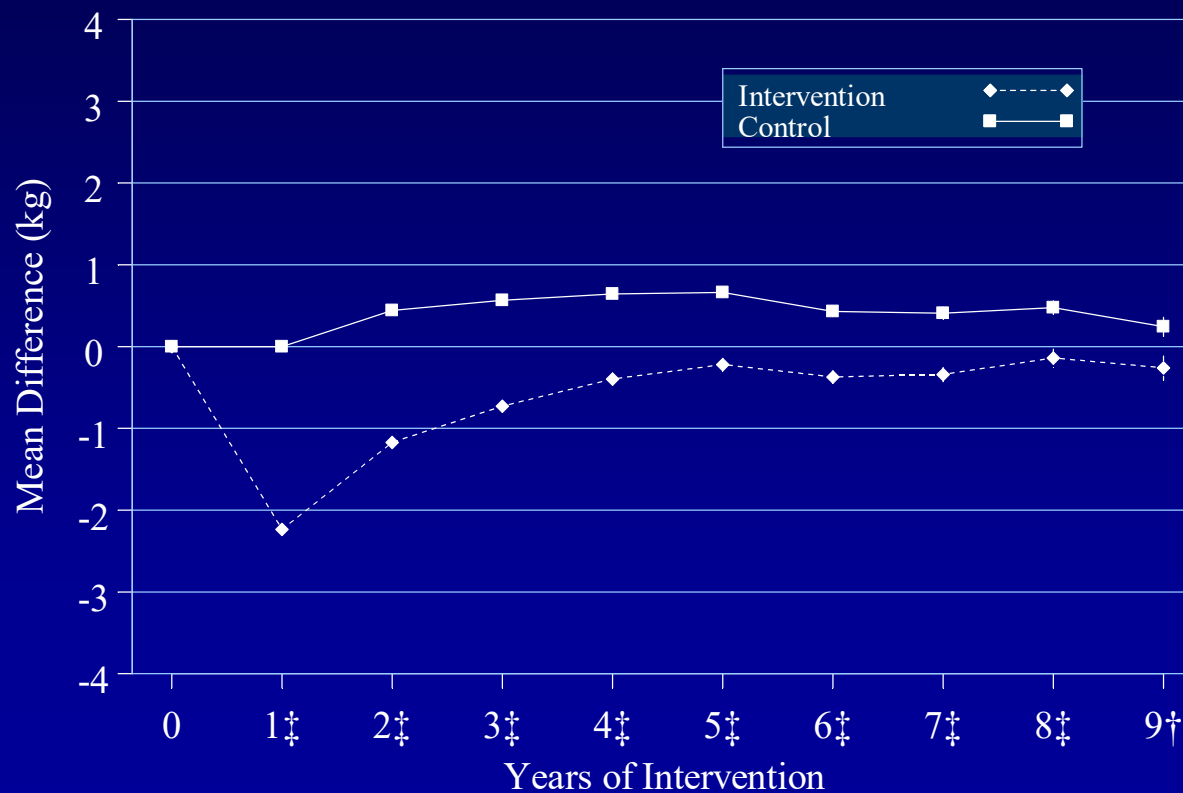
*Sometimes results from a study differ from the original hypothesis*

*We are always learning important information that we only obtain because we did the study*





# Diet change group women lost weight



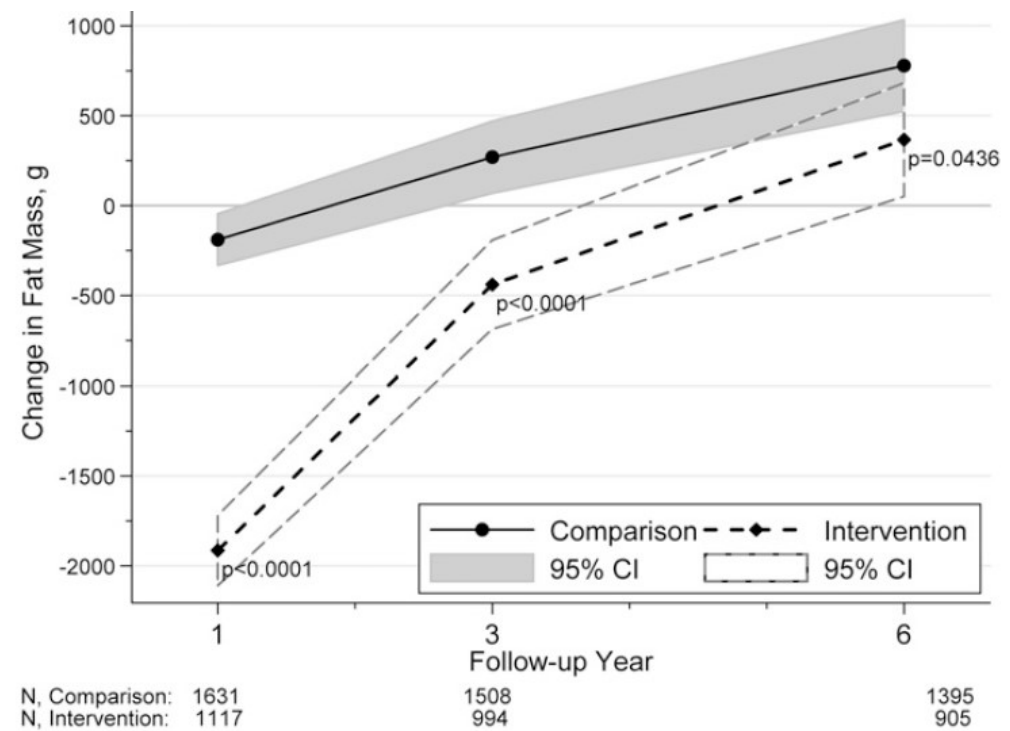
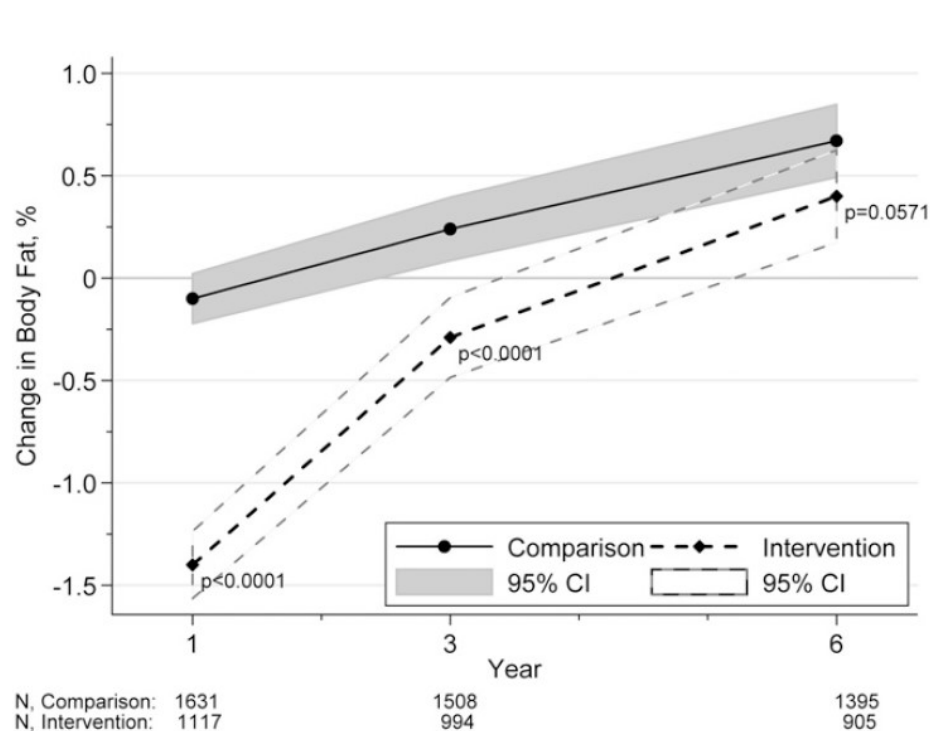
This was not a weight loss trial

JAMA 2006; 295; 39-49



Dietary

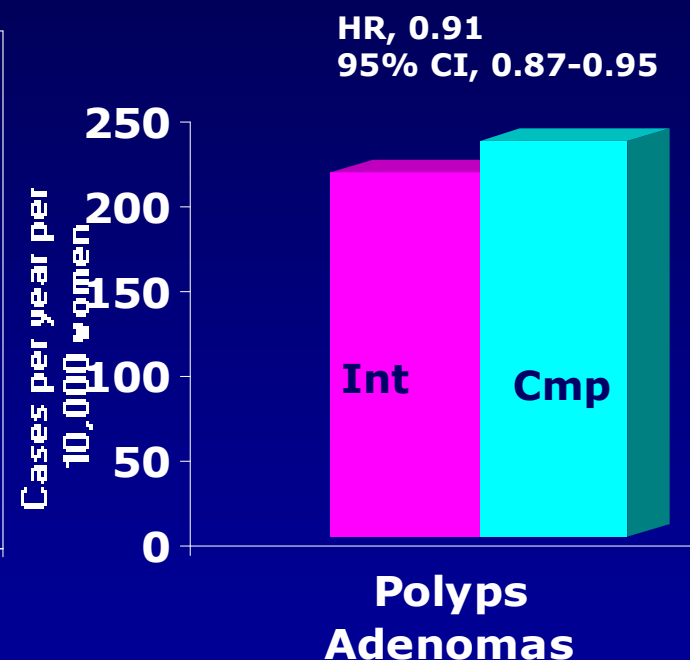
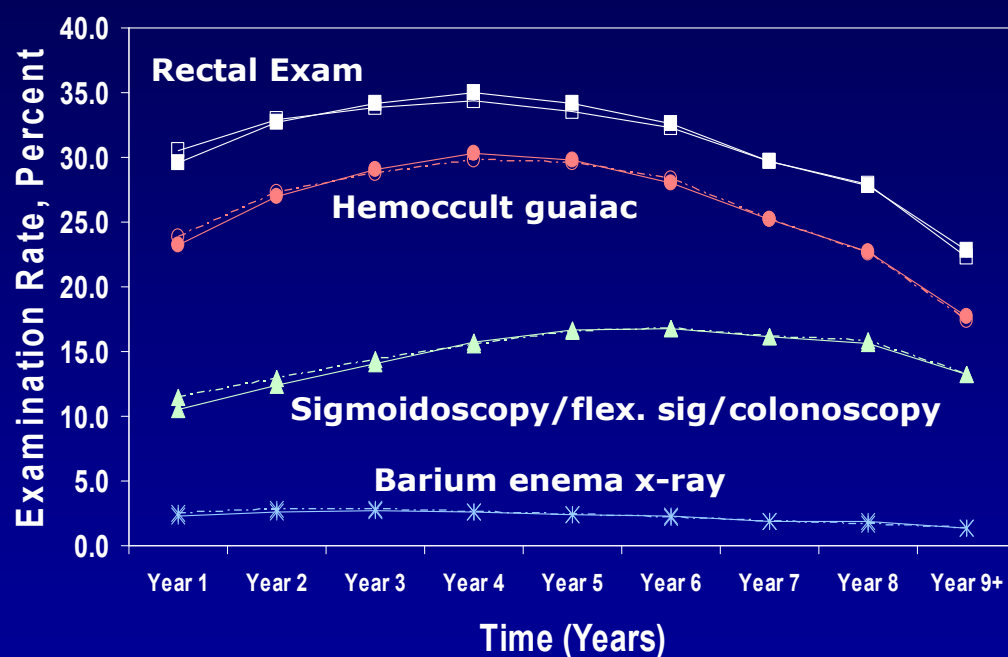
# WHI-DM beneficial effects on body composition



These graphs show two ways to measure body fat with the DXA scans. The dashed lines are women in the diet change group.

Carty et al *AJCN* 2011

# Diet change group women had fewer polyps/adenomas in the colon (but no effect on colon cancer)



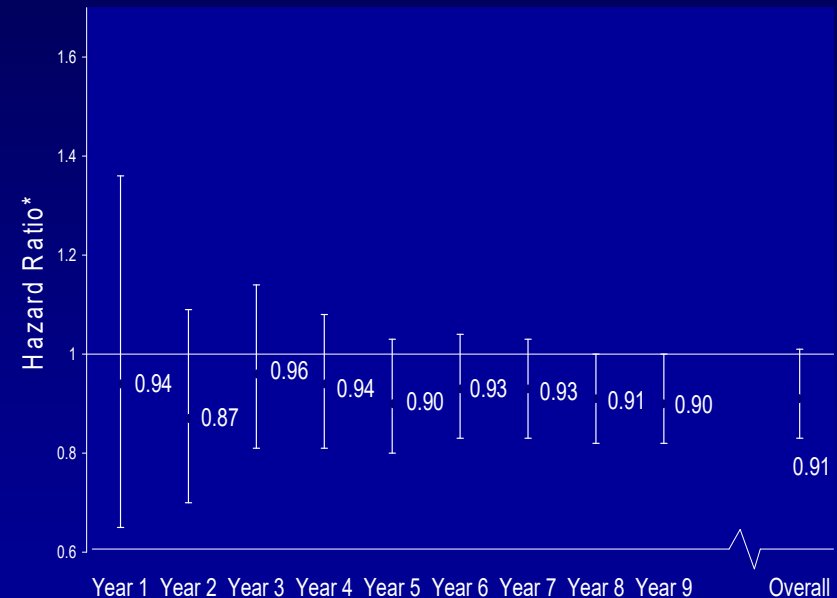
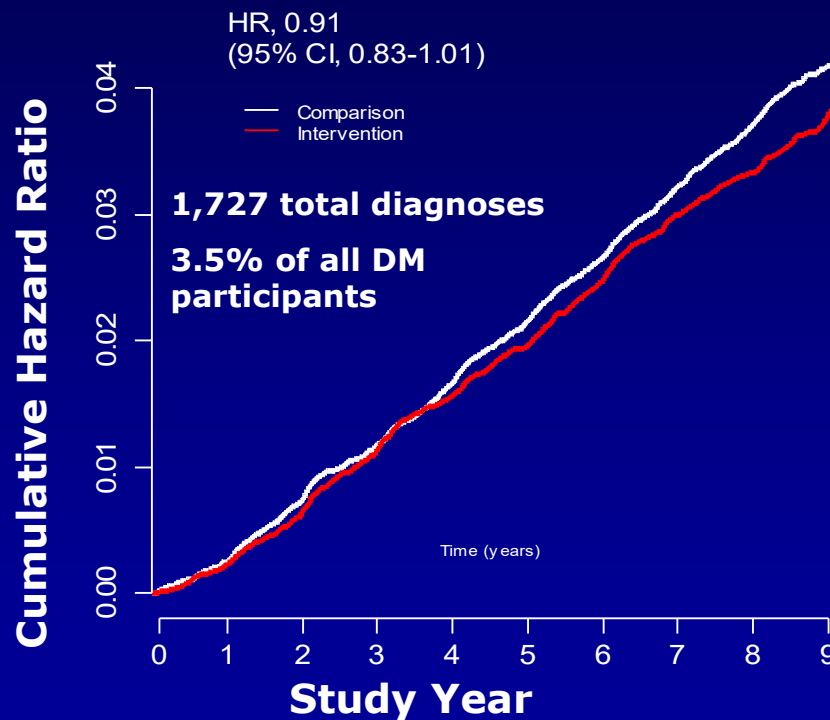
JAMA 2006; 295; 642-654

Some polyps may turn into cancer



Dietary

# Diet change group women *did not* have lower breast cancer incidence



JAMA 2006; 295; 629-642



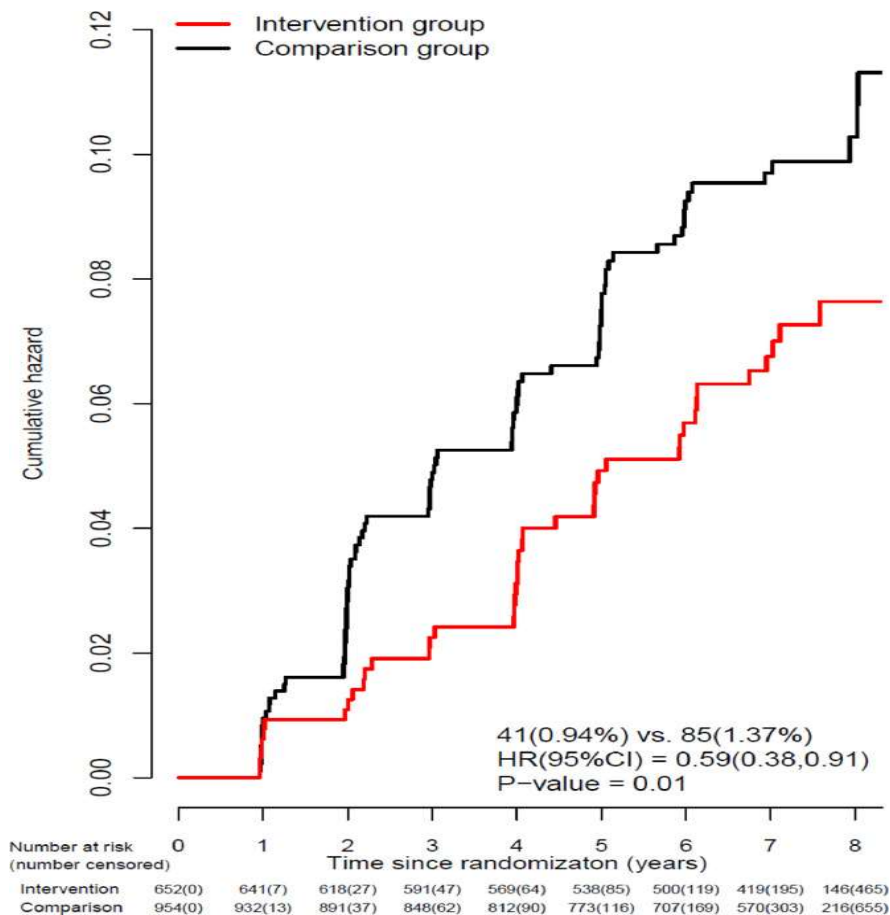
Dietary

# WHI-DM and long-term follow-up

- The WHI scientists continue to study the data and the primary study goals
- We asked new questions about diet and health in women
- We made some interesting discoveries regarding the low-fat dietary pattern and long-term health



# WHI low-fat diet and cognitive health (subset)



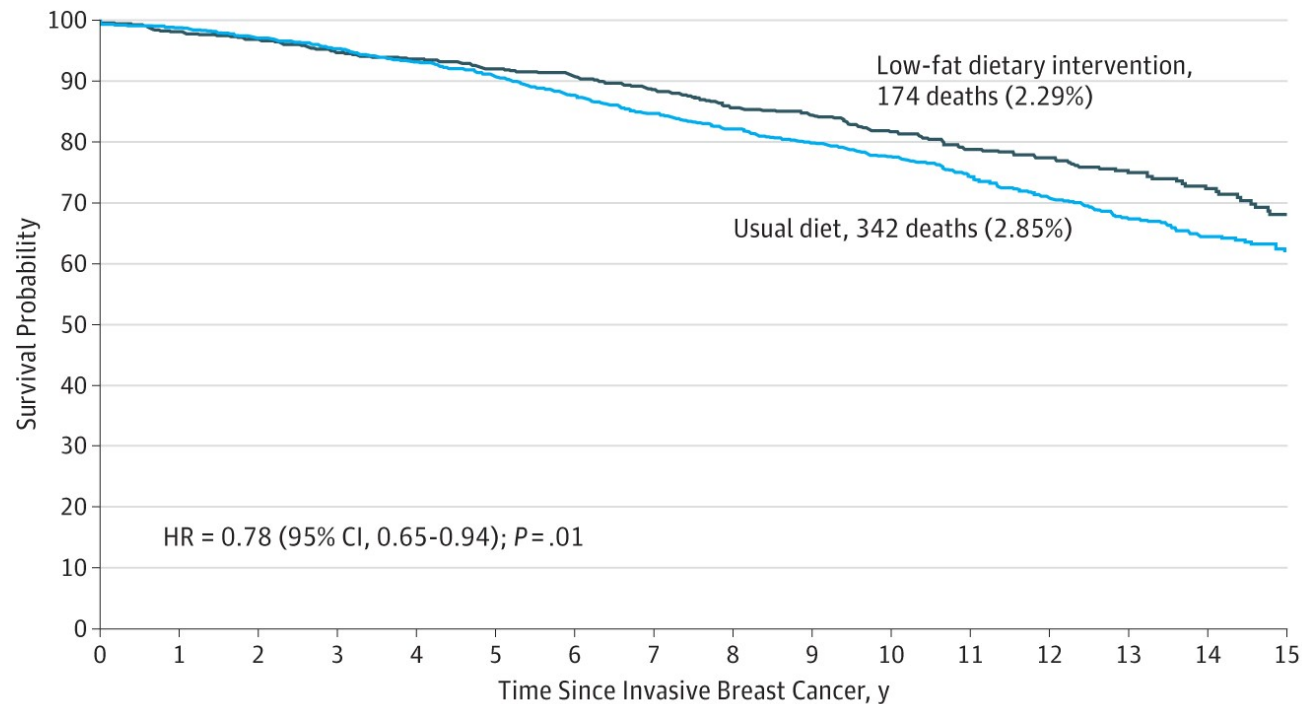
Women in the low-fat diet group who completed cognitive tests showed less cognitive decline compared to those in the usual diet group

Chlebowski et al 2020





# WHI low-fat diet and long-term health

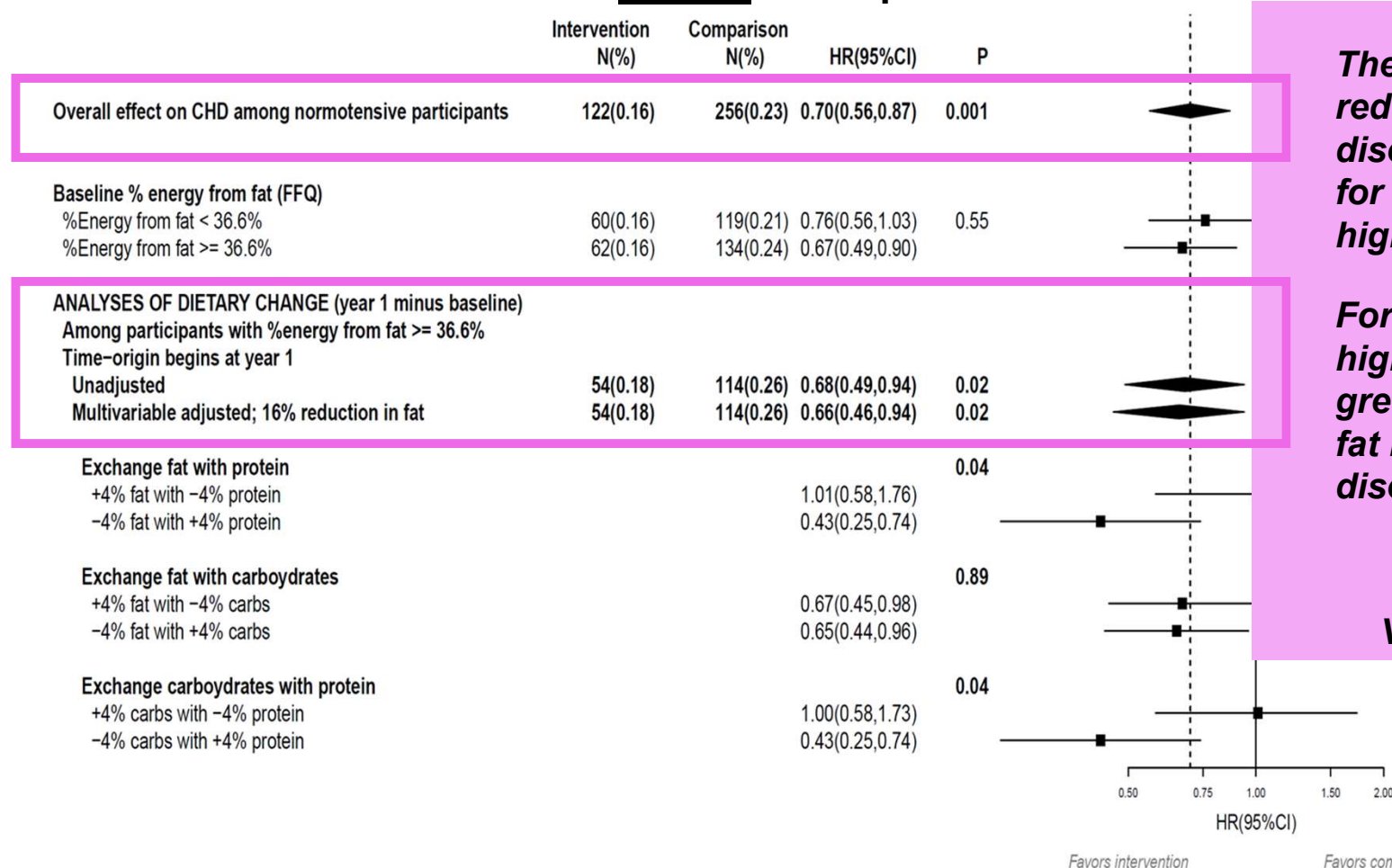


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|--------------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| No. at risk  |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |
| Low-fat diet | 671  | 659  | 651  | 636  | 629  | 618 | 610 | 595 | 575 | 543 | 479 | 393 | 313 | 239 | 165 | 99  |
| Usual diet   | 1093 | 1081 | 1062 | 1043 | 1019 | 993 | 959 | 926 | 898 | 837 | 724 | 600 | 473 | 353 | 253 | 141 |

**The low-fat dietary pattern was associated with lower risk of all causes of death – breast cancer, CVD and all other causes**

Chlebowski et al  
JAMA-Oncology  
2018

## Continued follow-up of the WHI low-fat dietary pattern on heart disease risk in women with normal blood pressure



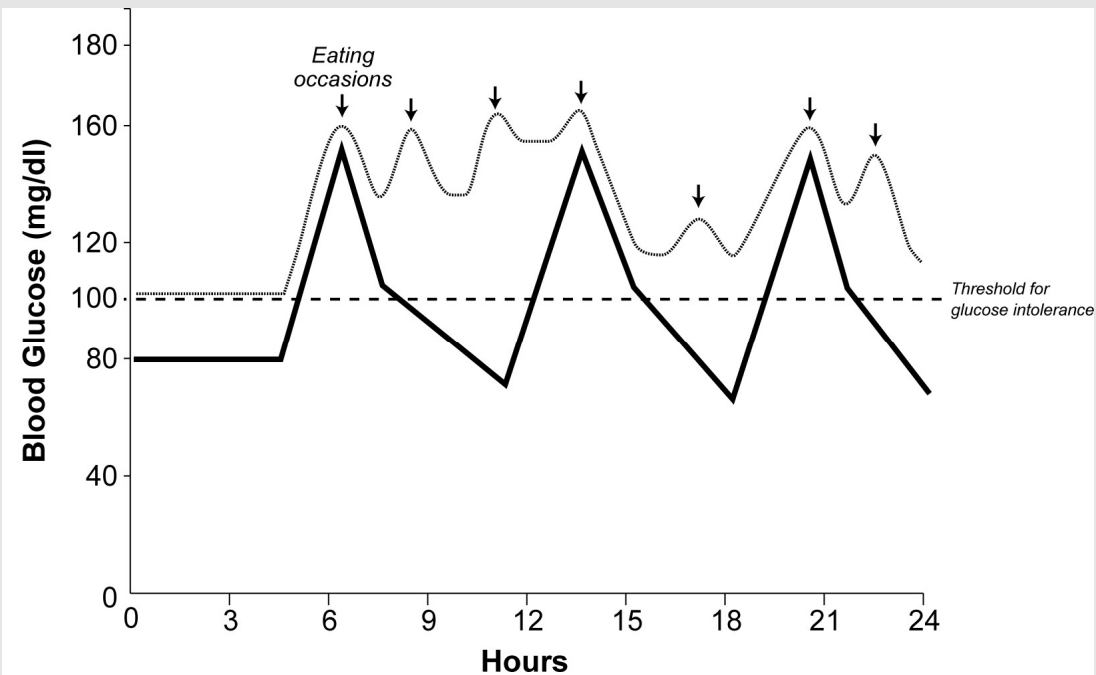
***The low-fat diet reduced heart disease risk by 30% for women without high blood pressure***

***For women consuming higher fat at baseline, greater reductions in fat lowered heart disease risk by 44%***

***Van Horn et al 2020***



## Number of daily eating occasion may be related to risk of type 2 diabetes



- Many of you completed 24-hour recalls during the trial
- We telephoned you and asked you about what foods you ate over the previous 24 hours, what hours of the day you ate and how often you ate a meal or snack
- Participants who ate 4 meals/day compared to 1-3 meals/day had a 38% increased risk of Type 2 Diabetes, even after controlling for diet change arm



Neuhouser et al 2020

# Thank you to all WHI participants

“If we could give every individual the right amount of nourishment and exercise, not too little and not too much, we would have the safest way to health.”

– Hippocrates

“Let food be thy medicine and let medicine be thy food”

– Hippocrates

