

A CALL FOR PLANT- BASED DIETS: WHY SHOULD WE GO THERE?

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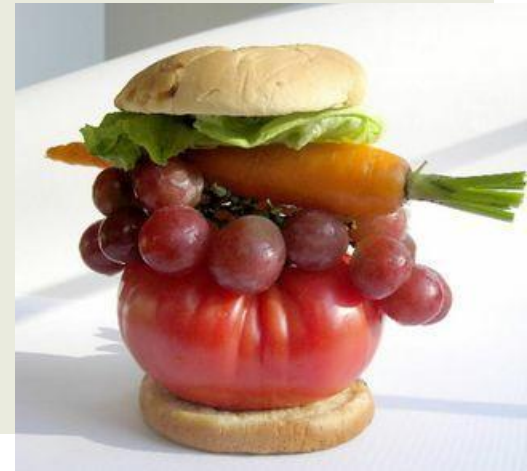
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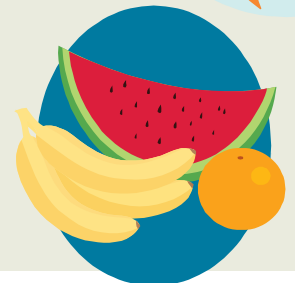
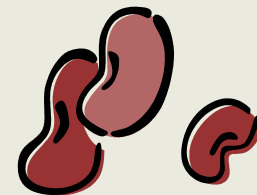
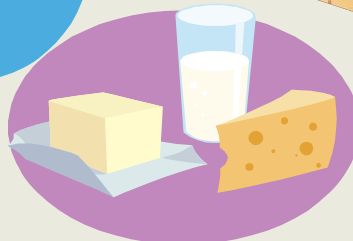
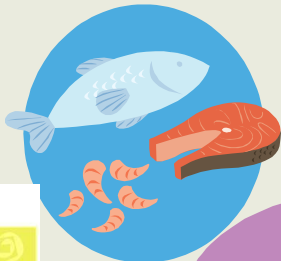
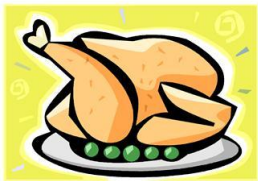
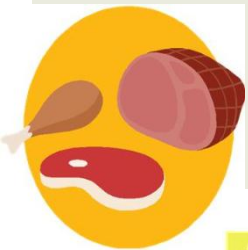
OUTLINE

- What are plant-based diets?
- Environmental and social issues
- Dietary patterns and health
- Randomized clinical trials using plant-based dietary approaches
- Where do we go from here?




TYPES OF DIETS

- Standard/Meat eater
- Semi-vegetarian
- Pesco-vegetarian
- Vegetarian
- Vegan



ENVIRONMENTAL AND SOCIAL COSTS OF FOOD PRODUCTION

 **FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**
Agriculture and Consumer Protection Department

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Spotlight / 2006

Livestock impacts on the environment

► **The challenge is to reconcile two conflicting demands: for animal food products and environmental services...**

A new report from FAO says livestock production is one of the major causes of the world's most pressing environmental problems, including global warming, land degradation, air and water pollution, and loss of biodiversity. Using a methodology that considers the entire commodity chain, it estimates that livestock are responsible for 18 percent of greenhouse gas emissions, a bigger share than that of transport. However, the report says, the livestock sector's potential contribution to solving environmental problems is equally large, and major improvements could be achieved at reasonable cost.

Based on the most recent data available, *Livestock's long shadow* takes into account the livestock sector's direct impacts, plus the environmental effects of related land use changes and production of the feed crops animals consume. It finds that expanding population and incomes worldwide, along with changing food preferences, are stimulating a rapid increase in demand for meat, milk and eggs, while globalization is boosting trade in both inputs and outputs.



The livestock sector is undergoing a complex process of technical and geographical change

Action on many fronts

The FAO report recommends a range of measures to mitigate livestock's threats to the environment:

- **Land degradation:** Restore damaged land through soil conservation, silvopastoralism, better management of grazing systems and protection of sensitive areas.
- **Greenhouse gas emissions:** Sustainable intensification of livestock and feed crop production to reduce carbon dioxide emissions from deforestation and pasture degradation, improved animal nutrition and manure management to cut methane and nitrogen emissions.
- **Water pollution:** Better management of animal waste in industrial production units, better diets to improve nutrient absorption, improved manure management and better use of processed manure on croplands.
- **Biodiversity loss:** As well as implementing the measures above, improve protection of wild areas, maintain connectivity among protected areas, and integrate livestock production and producers into landscape management.

ENVIRONMENTAL FOOD

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Slaves Put Squid on U.S. Dining Tables From South Pacific Catch

Abuses Against Workers Taint U.S. Meat and Poultry

JANUARY 25, 2005

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Workers in the U.S. meat and poultry industry endure unnecessarily hazardous work conditions, and the companies employing them often use illegal tactics to crush union organizing efforts, Human Rights Watch said in [a new report](#) released today.

In meat and poultry plants across the United States, Human Rights Watch found that many workers face a real danger of losing a limb, or even their lives, in unsafe work conditions. It also found that companies frequently deny workers' compensation to employees injured on the job, intimidate and fire workers who try to organize, and exploit workers' immigrant status in order to keep them quiet about abuses.

Field research for the report examined beef packing in Nebraska, hog slaughtering in North Carolina, and poultry processing in Arkansas. The report looks closely at companies such as Tyson Foods Inc., Smithfield Foods Inc., and Nebraska Beef Ltd.

"Meatpacking is the most dangerous factory job in America," said Lance Compa, the report's author and a labor rights researcher for Human Rights Watch. "Dangerous conditions are cheaper for companies—and the government does next to nothing."

Meatpacking is the most dangerous factory job in America.

Lance Compa, labor rights researcher for Human Rights Watch

Former indentured worker Yusril, 28, fishing on a small boat on the Java Sea. Photographer: Sanjit Das/Bloomberg Businessweek

QUEUE



ernoon he went to the East Jakarta offices of to work on foreign fishing vessels. He was ed ship that trawls in the waters off New ver a thick stack of contracts in a alls. Waving at a pile of green Indonesian : "You really can't waste time reading this. es tomorrow."

belies his slight frame. (Yusril asked that his) He was desperate for the promised fish. His wife was eight months pregnant, nine months earlier. After taking a daylong ee he borrowed from his brother-in-law, ion. The agent rushed him through signing which Yusril does not read.

st contract, the "real" one, would later haunt ed out terms with no rights. In addition to the n, Yusril would surrender 30 percent of his ould hold unless the work was completed. othing for the first three months, and if the d to the fishing company's satisfaction,

Yusril would be sent home and charged more than \$1,000 for the airfare. The meaning of "satisfactory" was left vague. The contract said only that Yusril would have to work whatever

ENVIRO

Mark Bittman



March 9, 2012, 12:34 PM

More [Good] News about [Bad] Gestation Crates

By MARK BITTMAN

Another significant victory in the fight to ban sow gestation crates: [Compass Group USA](#)—whose U.K. parent company is the largest food service company in the world—announced that it plans to eliminate the crates from its U.S. pork supply chain by 2017.

The Charlotte-based U.S. branch of the company runs roughly 10,000 dining facilities at hospitals, senior living centers, schools, colleges and universities, corporate offices and entertainment and sports venues around the country, and purchases around 38 million pounds of pork every year.

Last month, [McDonald's announced](#) that it is requiring all of its pork suppliers to submit plans for phasing out gestation crates by May, at which point the company will likely set a timeline for eliminating the crates from its U.S. supply chain (2017 would be a reasonable guess). Compass-owned [Bon Appétit Management Company](#) also committed last month [to eliminate gestation crates](#) (and hen battery cages) by 2015, while Smithfield, Cargill and Hormel are all making efforts to reduce their use of the crates as well.

Gestation crates are individual metal stalls so small that sows cannot turn around. Critics of the crates oppose them for obvious reasons ([watch for yourself](#), if you like), while advocates—usually those in the industrial livestock business—suggest that the alternative system, group housing pens, often leads to fighting and the unequal distribution of food. Group pens may be more labor- and capital-intensive, but I have a hard time believing that they could possibly be more cruel.



Twyla Francois/CETFA



L COSTS OF N



2010 DIETARY GUIDELINES

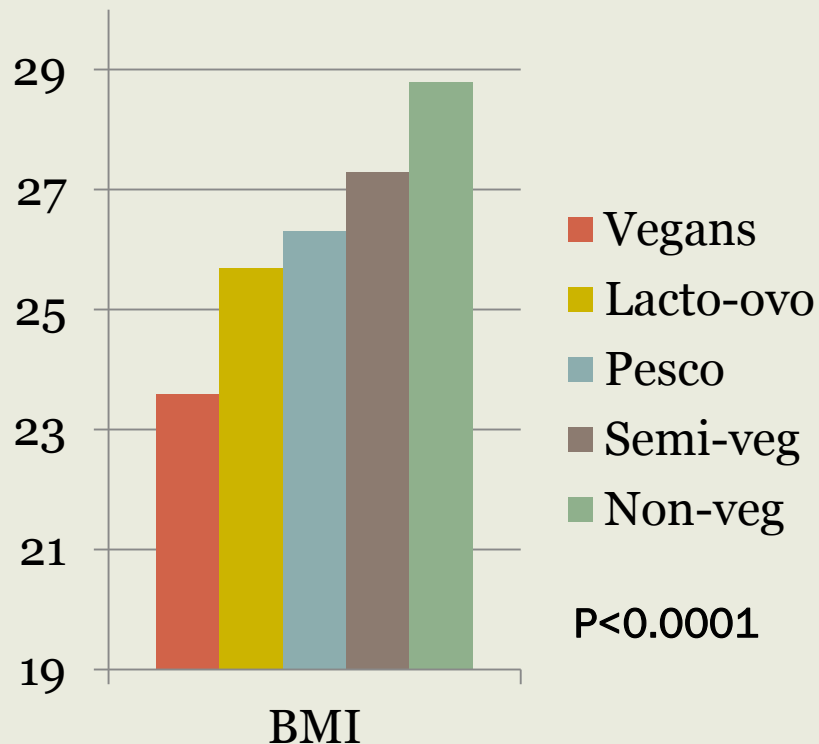
- “In prospective studies of adults, compared to non-vegetarian eating patterns, vegetarian style-eating patterns have been associated with improved health outcomes –lower levels of obesity, a reduced risk of cardiovascular diseases, and lower total mortality. Several clinical trials have documented that vegetarian eating patterns lower blood pressure.”

2010 DIETARY GUIDELINES

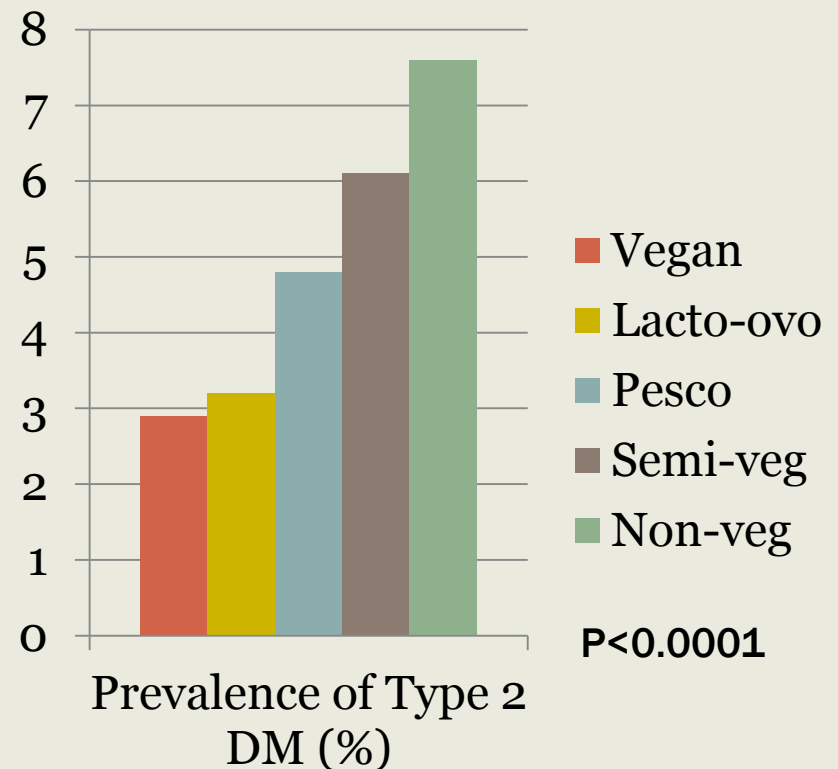
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THE EVIDENCE FOR MOVING TOWARDS PLANT-BASED DIETS

Type of vegetarian diet and body weight

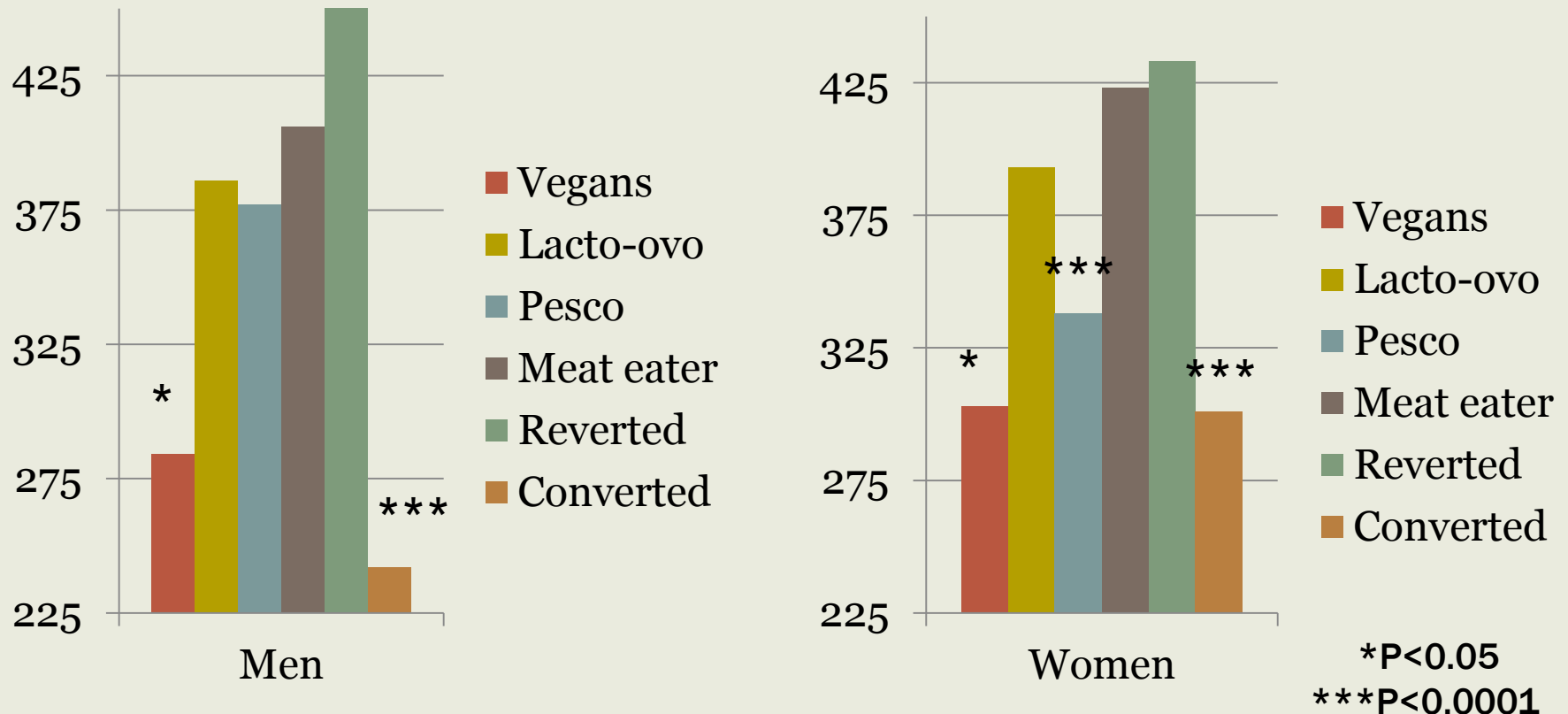


Type of vegetarian diet and prevalence of type 2 DM



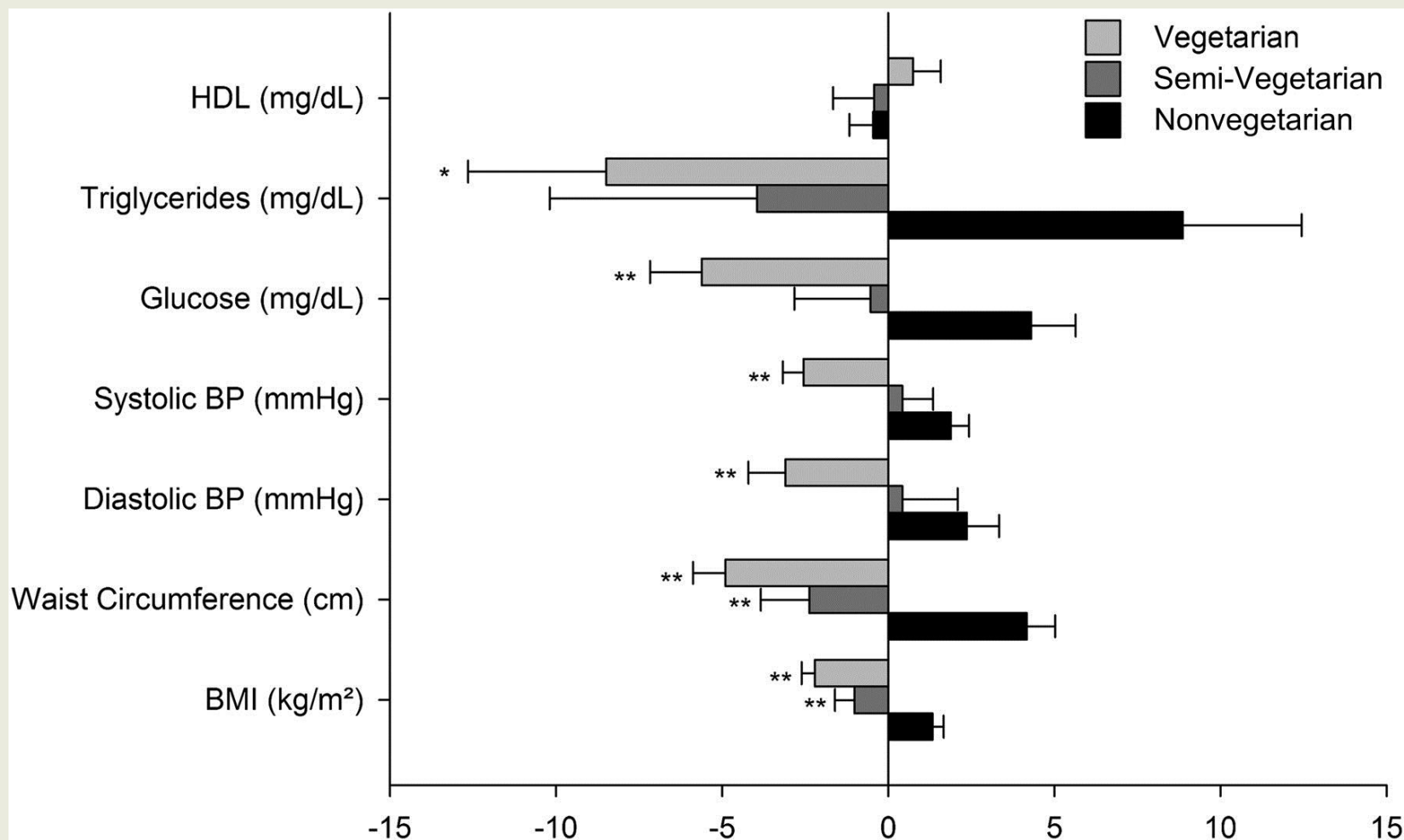
THE EVIDENCE FOR MOVING TOWARDS PLANT-BASED DIETS

Weight gain in grams over 5 years as compared to reference group of meat eaters



International Journal of Obesity (2006) **30**, 1389–1396.

Dietary pattern and Metabolic Risk Factors. Mean-centered values are shown with whiskers representing SE. ANCOVA was used in comparing risk factors stratified by dietary patterns.



Rizzo N S et al. Dia Care 2011;34:1225-1227

Dose-response relationship between red meat intake and risk of all-cause mortality in the Health Professionals Follow-up Study (A) and the Nurses' Health Study (3)

Food News

USDA Relents on Pink Slime; Schools Can Opt Out

By Samantha Bonar Mon., Mar. 19 2012 at 6:00 AM

Categories: Food News, Hamburgers

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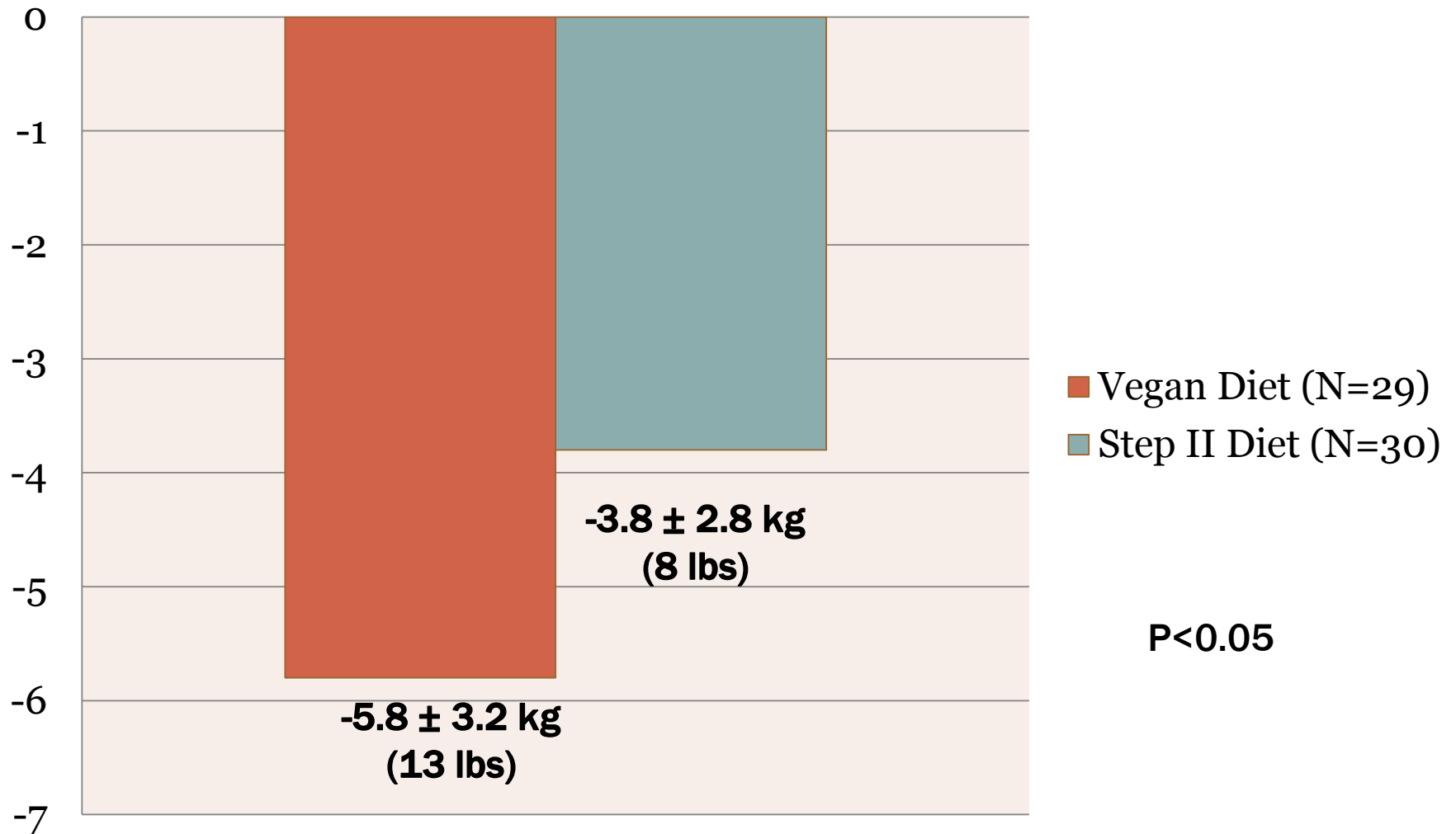


Schools can now say no to pink slime in government hamburger

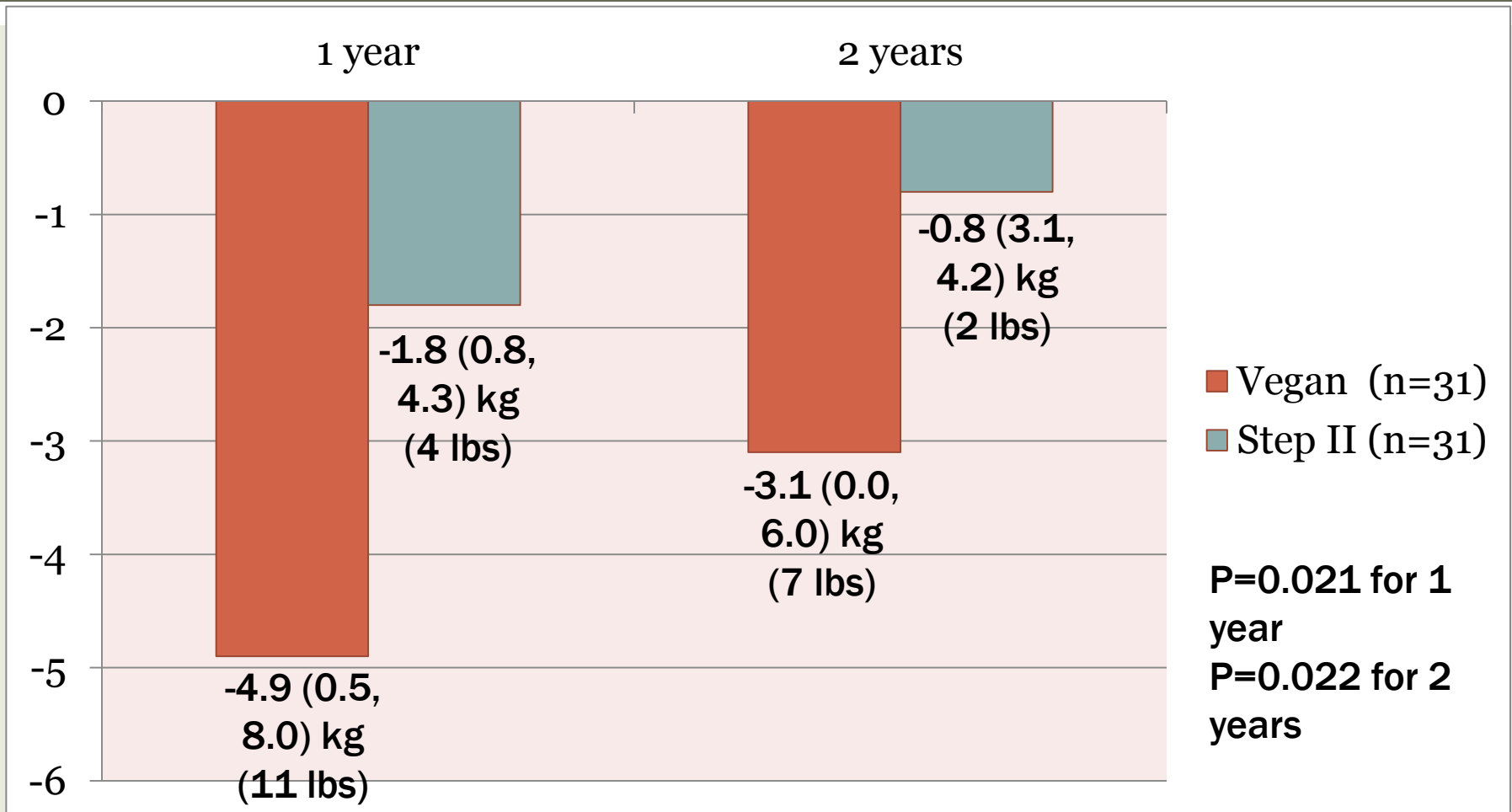
Plant-based dietary intervention on body weight: Methods

- 64 overweight (BMI 26-44 kg/m²), postmenopausal women
- Randomly assigned to a low-fat vegan or low-fat, low-cholesterol diet
- 14-week study
- Weekly meetings included:
 - cooking demonstrations
 - meal planning techniques
 - tips for eating out
 - nutrition information

RESULTS: WEIGHT CHANGES AT 14 WEEKS



RESULTS: WEIGHT LOSS AT 1 AND 2 YEARS



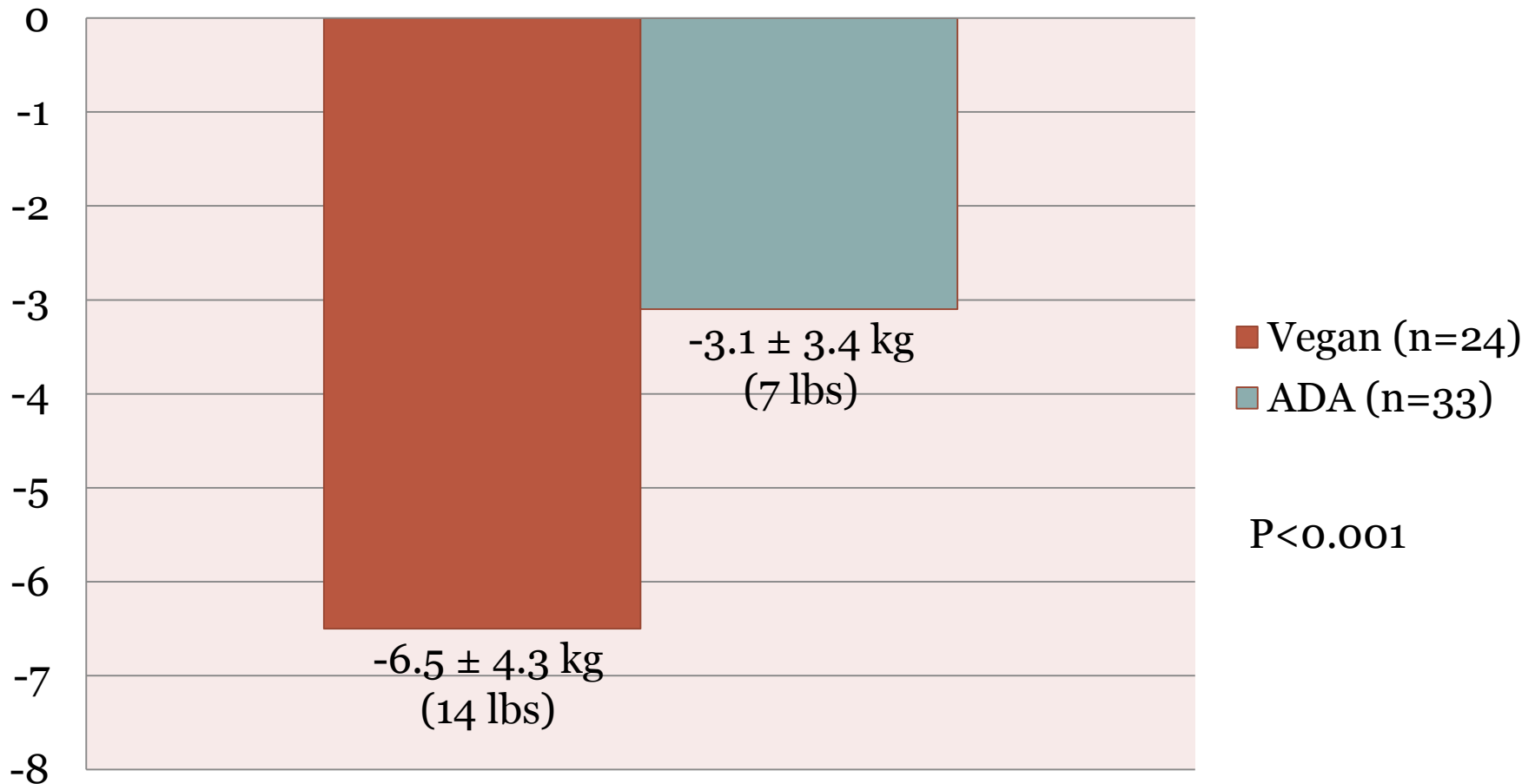
Weight loss is reported as median (interquartile range) and is the difference from baseline weight at years 1 and 2.

PLANT-BASED DIETARY INTERVENTION IN TYPE 2 DIABETES

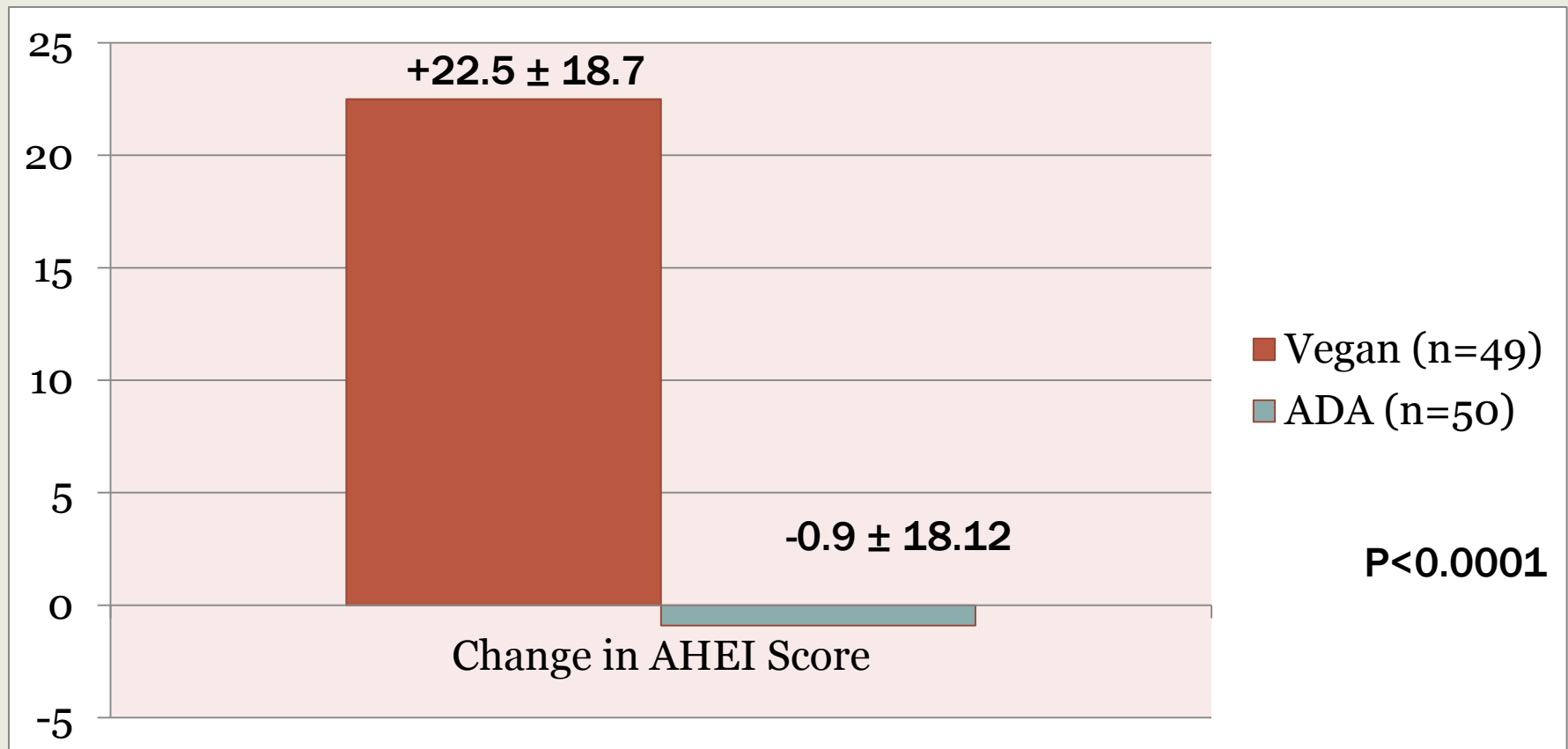
- NIDDK
- Randomized clinical trial
 - Vegan, low-fat, low-GI diet (n = 49)
 - Diet based on ADA guidelines (n = 50)
- 22-week study with 1-year follow-up
- Adult (18 years and older) participants with type 2 DM and a HgbA1c of 6.5-10.5%

WEIGHT LOSS AT 22 WEEKS AMONG PARTICIPANTS WHOSE DIABETES MEDICATIONS REMAINED UNCHANGED

22 weeks



DIETARY QUALITY (AHEI INDEX)



AHEI score was modestly, negatively correlated with changes in weight ($r = -0.27$, $P < 0.01$).

DIETARY ADHERENCE & ACCEPTABILITY

■ Dietary Adherence

■ Weight loss trial

- 1 and 2 years: 61% vegan; 55% Step II

■ DM trial

- 22 weeks: 67% vegan; 44% ADA
- 74 weeks: 51% vegan; 58% ADA

■ Hunger

■ Acceptability

- Food preparation

Obesity. 2007 Sep;15(9):2276-81.

J Am Diet Assoc. 2009 ;109(2):263-72.

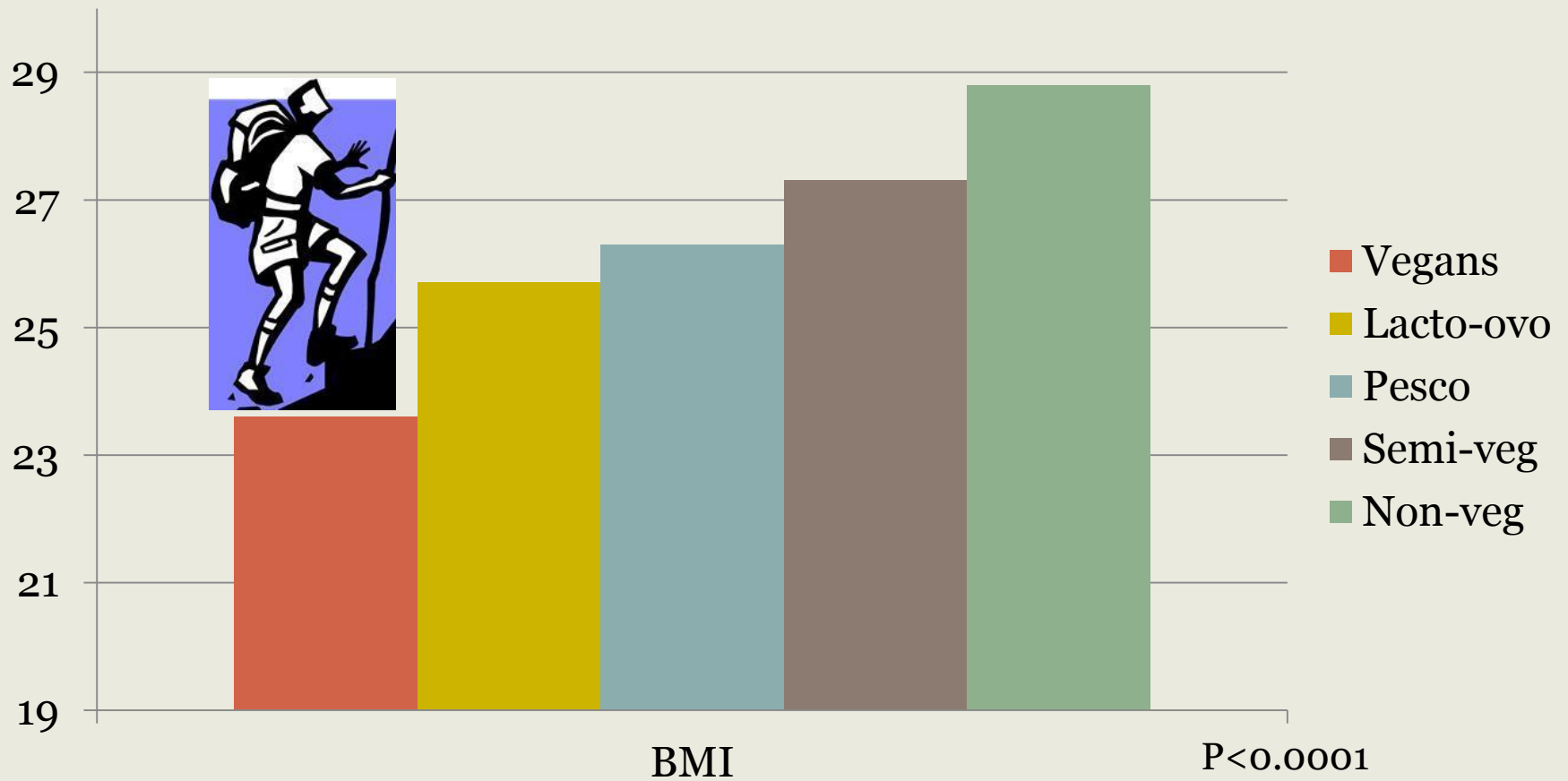
J Cardiopulm Rehabil. 2004 Jul;24(4):229-35.

DIETARY APPROACHES FOR PCOS

- Insulin resistant
- Overweight and obese
- Brie Turner-McGrievy, PhD, MS, RD; Deborah Billings, PhD; Judith Burgis, MD
- Healthy Eating for Reproductive Health (HERHealth)
- 6-month RCT
 - Vegan diet
 - Standard calorie-controlled approach



NEXT STEPS



RANDOMIZED CONTROLLED TRIAL

- Standard/Meat eater
- Semi-vegetarian
- Pesco-vegetarian
- Vegetarian
- Vegan



RANDOMIZED CONTROLLED TRIALS



"I stay healthy by following a strict vegetarian diet — nothing but coffee and cigarettes!"

RANDOMIZED CONTROLLED TRIALS

Title: Diet Composition and Energy Balance (R01)

Announcement Type

This is a reissue of [PA-07-218](#).

Update: The following updates relating to this announcement have been issued:

- [September 29, 2010](#) (NOT-OD-11-007) - NIH to Require Use of Updated Electronic Application Forms in 2011. Adobe B1 forms are required for due dates on or after May 8, 2011
- [August 16, 2010](#) - IMPORTANT NOTE! NIH has eliminated the error correction window for due dates of January 25, 2011 and beyond. As of January 25, all corrections must be co
- [April 30, 2010](#) - See Notice NOT-HD-10-013 Participation of NICHD.

Program Announcement (PA) Number: PA-10-152

WHERE DO WE GO FROM HERE?

- Do strategies to reduce meat consumption (Meatless Mondays) work?
- How do we effectively do research on the optimal diet?
- Is it worth testing?



QUESTIONS?

