

Forever Young

**Secrets of delaying aging and
living disease free**

Part 4

Roman Pawlak, Ph.D, RD



What is the most effective aspect
of diet/nutrition that has
consistently been shown to
reduce risk of chronic health
conditions and to increase
longevity?

ANSWER:

**Caloric
restriction**

**“A man is as old
as his arteries”**

Vascular aging

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graph TD; A[Vascular aging] --> B[Decreased nitric oxide synthesis]; B --> C[Increased production of reactive oxygen species (ROS)]; C --> D[Increased stiffness and thickness of arteries]; D --> E[Increased systolic and diastolic BP]; B --> F[Increased platelet aggregation effect]; F --> G[Increased vascular inflammation and atherogenesis];
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Decreased nitric oxide synthesis

Increased production of reactive oxygen species (ROS)

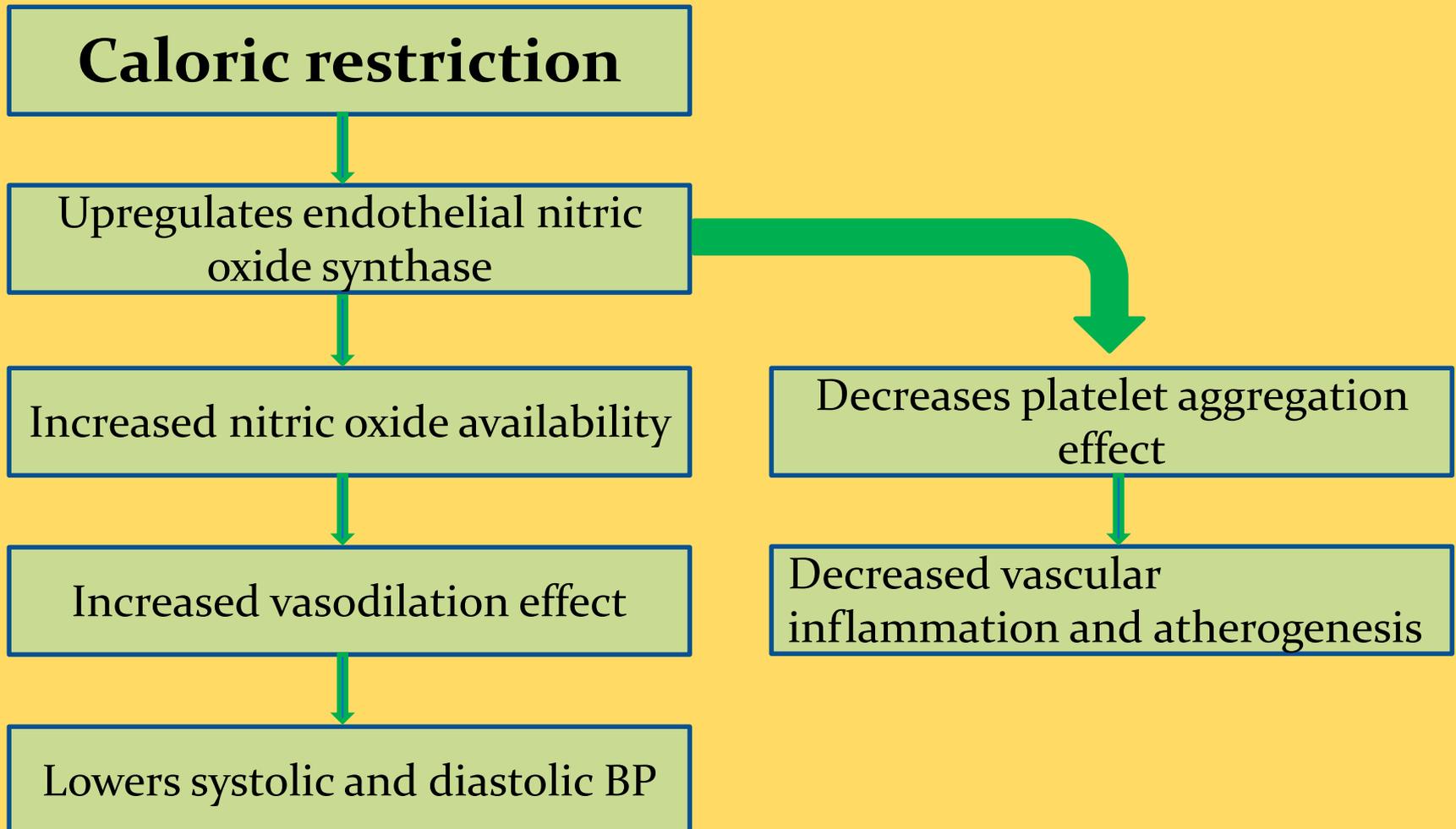
Increased stiffness and thickness of arteries

Increased systolic and diastolic BP

Increased platelet aggregation effect

Increased vascular inflammation and atherogenesis

Caloric restriction – effect on arteries

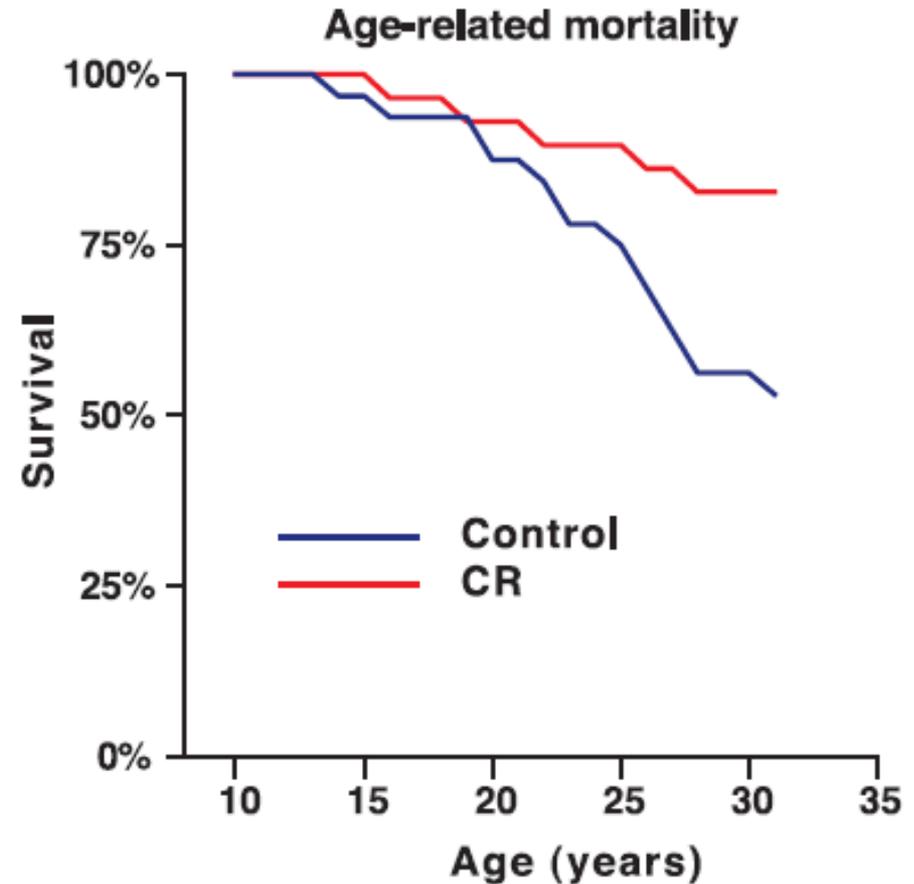
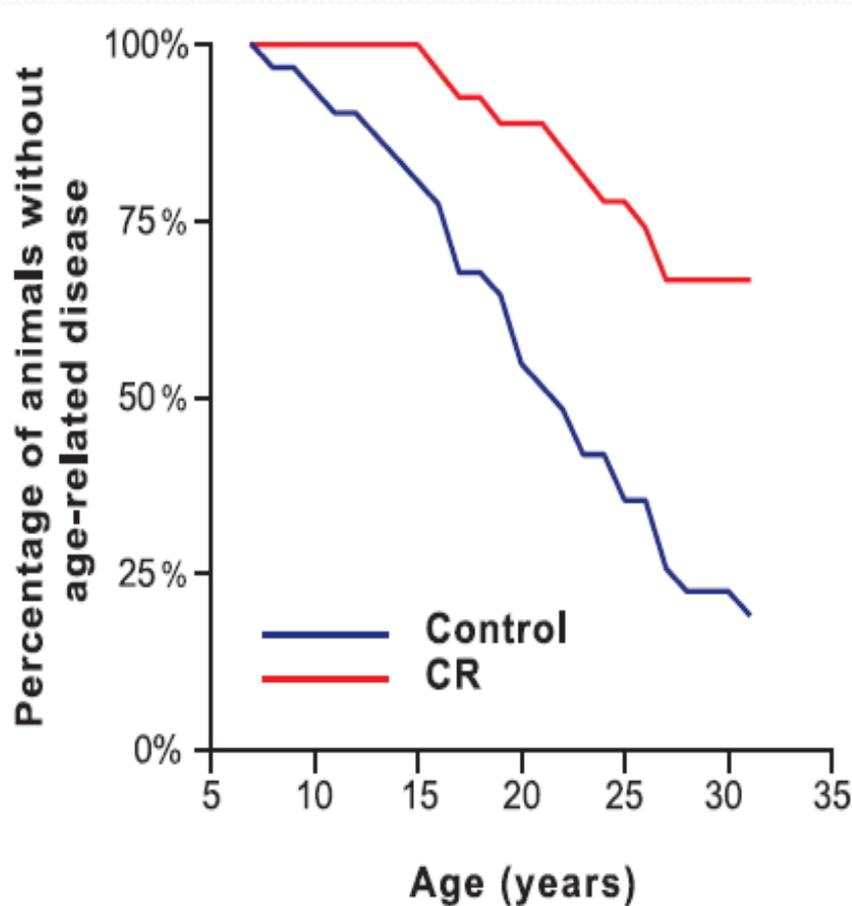


Caloric restriction delays disease onset and mortality in Rhesus Monkeys

Colman et al., Science, 2009(July 10);325:201-204

- **N = 76, 7 to 14 years old rhesus monkeys**
 - **Group 1** - caloric restriction (CR) monkeys fed a diet with 30% caloric deficit
 - **Group 2** - control group with no dietary restriction
- Any animal that died underwent a necropsy by a board-certified pathologist who was blinded as to the animal's diet group

Impact of caloric restriction on mortality and morbidity



“... at any point in time, the control animals had three times the rate of death from an age-related cause when compared to animals under CR.”

**Seeing
is
believing**



A and B - a typical control animal at 27.6 years of age (about the average life span). C and D age-matched animal on CR.

Caloric restriction delays disease onset and mortality in Rhesus Monkeys

Colman et al., Science, 2009(July 10);325:201-204

“Animals subjected to CR had statistically significant preservation of GM (gray matter - RP) volume in subcortical regions ... CR reduced age-associated brain atrophy in key regions that subserve motor function and aspects of executive function.”

Calorie restriction in humans: An update

Most et al. Ageing Research Reviews, 2017;39:36–45

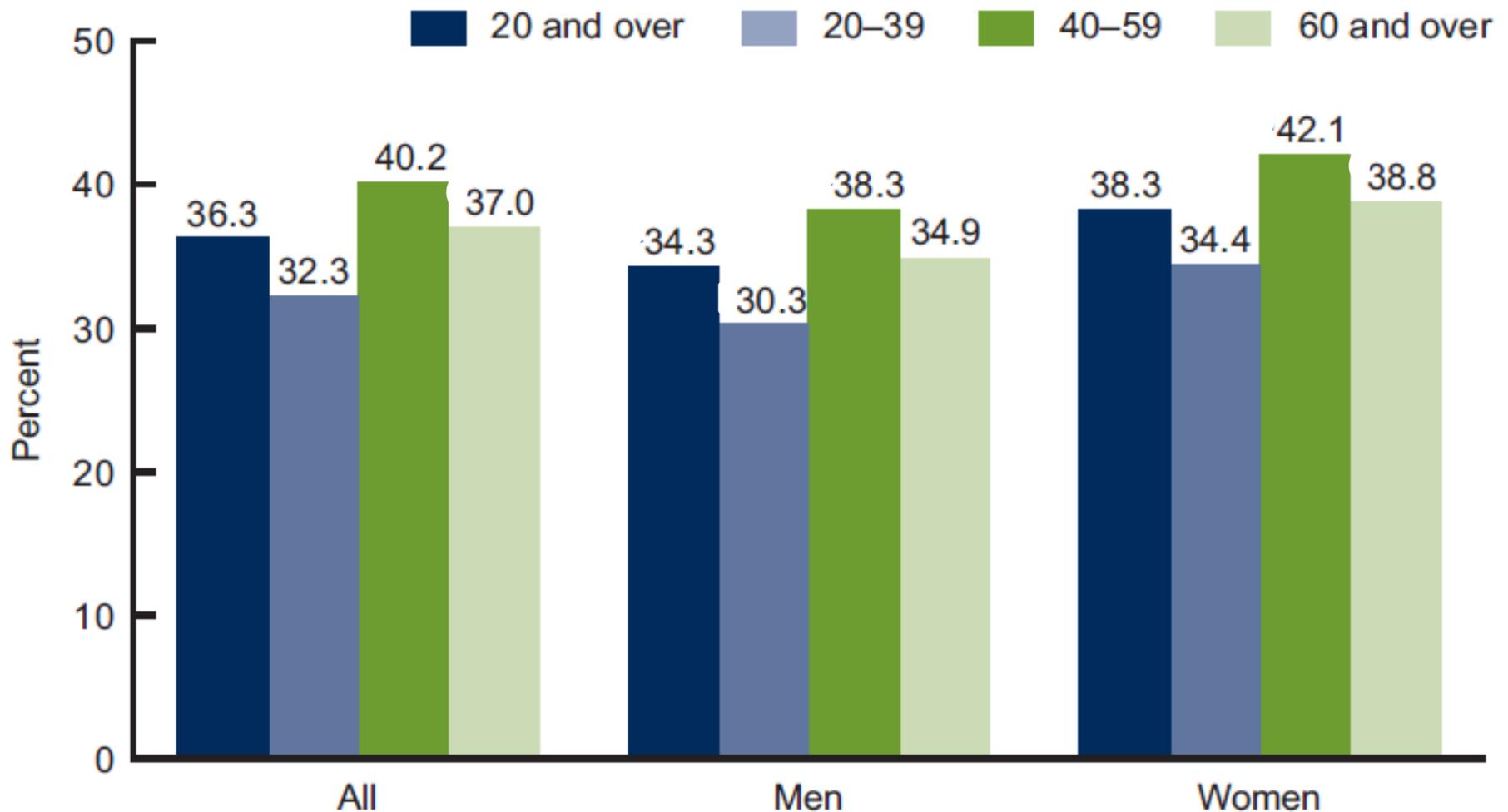
“Calorie restriction (CR), ..., has been shown to extend healthspan and lifespan in rodent and primate models. Accumulating data from observational and randomized clinical trials indicate that CR in humans results in some of the same metabolic and molecular adaptations that have been shown to improve health and retard the accumulation of molecular damage in animal models of longevity. In particular, moderate CR in humans ameliorates multiple metabolic and hormonal factors that are implicated in the pathogenesis of type 2 diabetes, cardiovascular diseases, and cancer, the leading causes of morbidity, disability and mortality.”

Health benefits of caloric restriction

- ✓ Increased longevity
- ✓ Reduced risk of CVD
- ✓ Reduced risk of cancer
- ✓ Reduced risk of type 2 diabetes
- ✓ Reduced risk of dementia and Alzheimer's disease
- ✓ Reduced risk of Parkinson's disease
- ✓ Reduced risk of brain atrophy
- ✓ Reduced risk of endometriosis

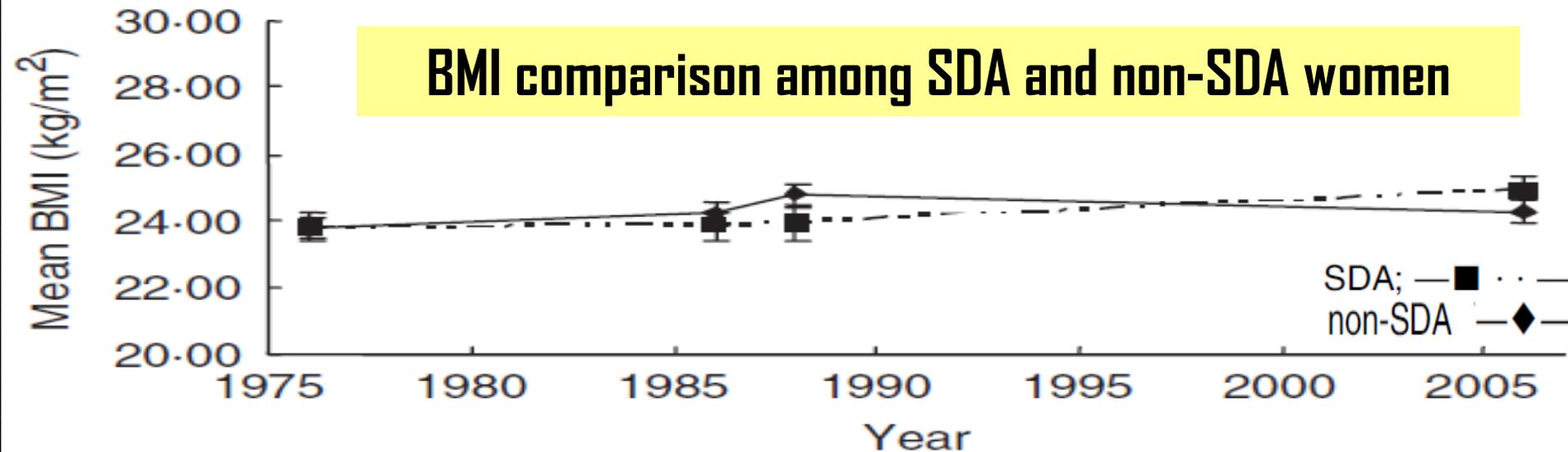
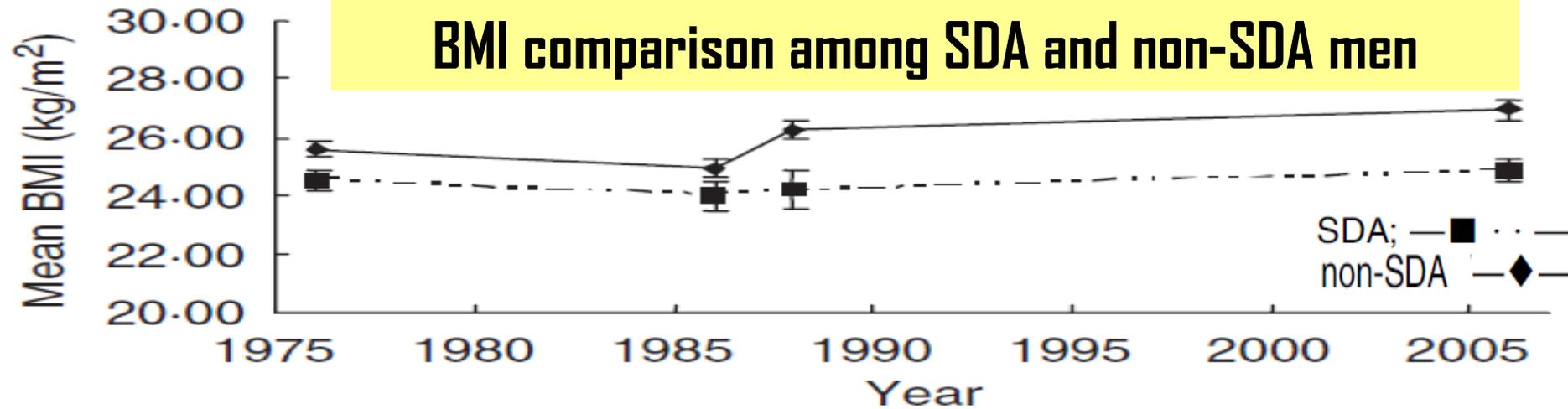
**How is this
applicable to you?**

Prevalence of obesity among American adults in 2011-2014



Does the prescriptive lifestyle of Seventh-day Adventists provide 'immunity' from the secular effects of changes in BMI?

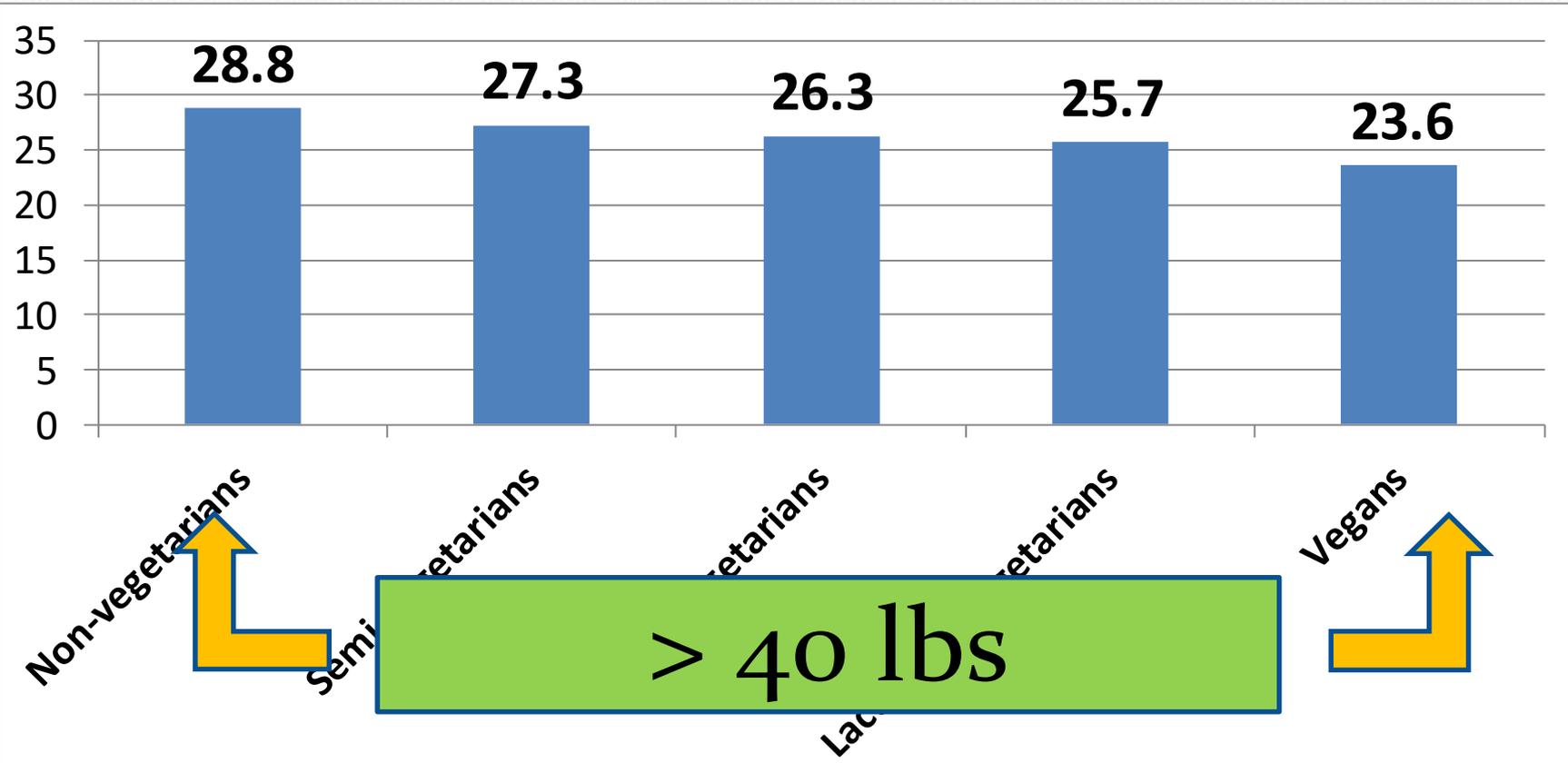
Kent & Worsley. Public Health Nutrition: 2008;12(4),472-480



Type of Vegetarian Diet, Body Weight, and Prevalence of Type 2 Diabetes

Tonstad S., et al Diabetes Care 2009;32:791-796

Average BMI by diet group

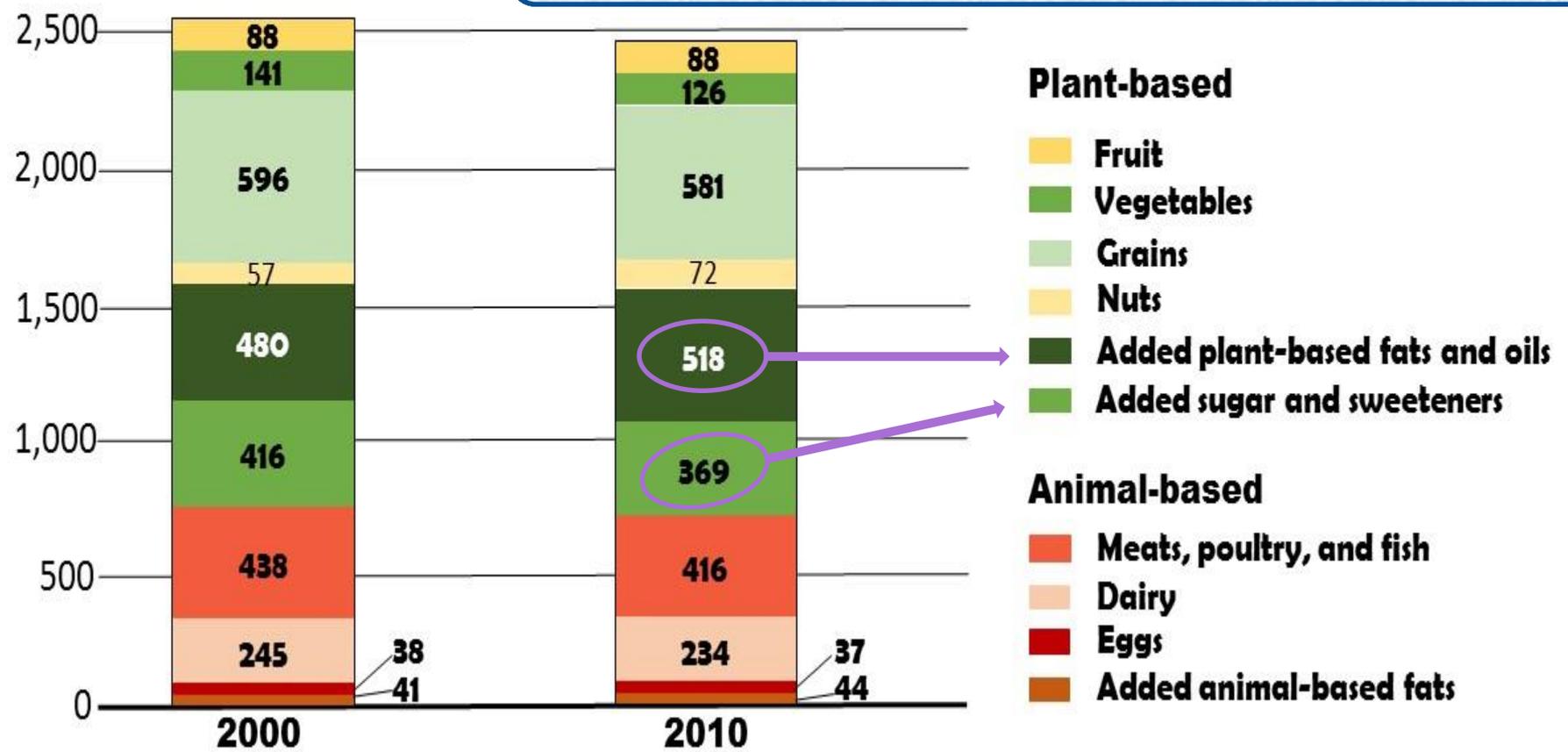


How can caloric
restriction be
implemented?

Loss-adjusted availability of U.S. calories by food group

Daily calories per person

$$887/2500 \times 100\% = 35.5\%$$



- Plant-based**
 - Fruit
 - Vegetables
 - Grains
 - Nuts
 - Added plant-based fats and oils
 - Added sugar and sweeteners
- Animal-based**
 - Meats, poultry, and fish
 - Dairy
 - Eggs
 - Added animal-based fats

Added fats and oils are added to food during processing or preparation and do not include naturally occurring fats, such as in meat, dairy products, nuts and avocados. Added animal-based fats include better, lard, and edible beef tallow.

Source: USDA, Economic Research Service Loss-Adjusted Food Availability data.



Starbucks White Chocolate Mocha (330 Kcal) contains 12 tsps of sugar, more than most 12 oz. of soft drinks



Starbucks Mocha Frappuccinio (410 kcal) contains 12 tsps of sugar, and 9 grams of saturated fat

A2331RS







3.5 oz. = 540 kcal

Equivalent of

1.6 lbs of potatoes

**6.5 slices of whole
wheat bread**







FUCK D
JUNKIE

BEST BEFORE



...COCOA BUTTER, CHOCOLATE, LACTOSE, SKIM MILK, MILKFAT, SOY LECITHIN, ARTIFICIAL FLAVOR), PEANUTS, CORN SYRUP, SUGAR, SKIM MILK, BUTTER, MILKFAT, PARTIALLY HYDROGENATED SOYBEAN OIL, LACTOSE, SALT, EGG WHITES, ARTIFICIAL FLAVOR. Allergy Information: May contain almonds.

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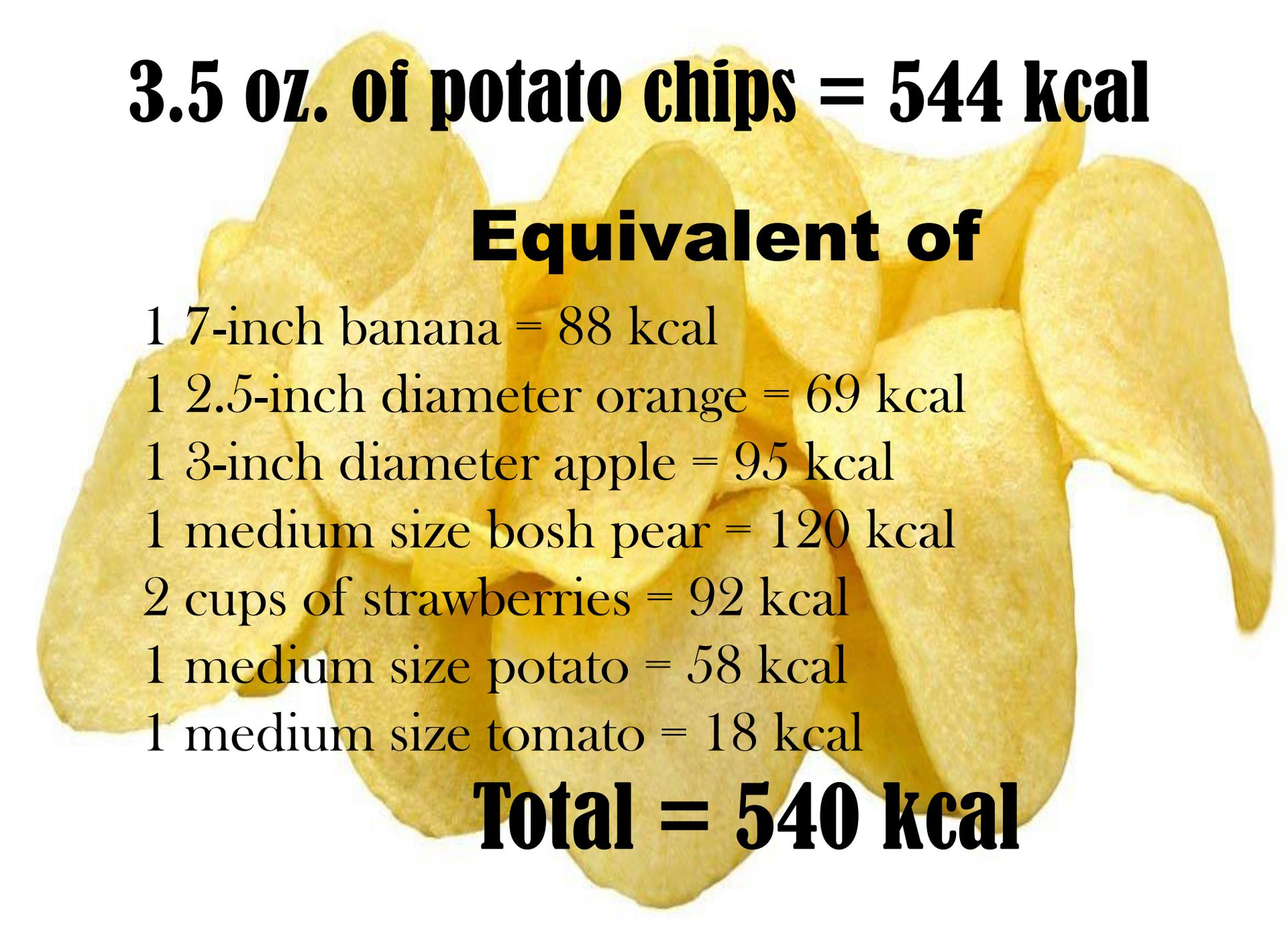
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3.5 oz. of potato chips = 544 kcal

Equivalent of

1 7-inch banana = 88 kcal

1 2.5-inch diameter orange = 69 kcal

1 3-inch diameter apple = 95 kcal

1 medium size bosh pear = 120 kcal

2 cups of strawberries = 92 kcal

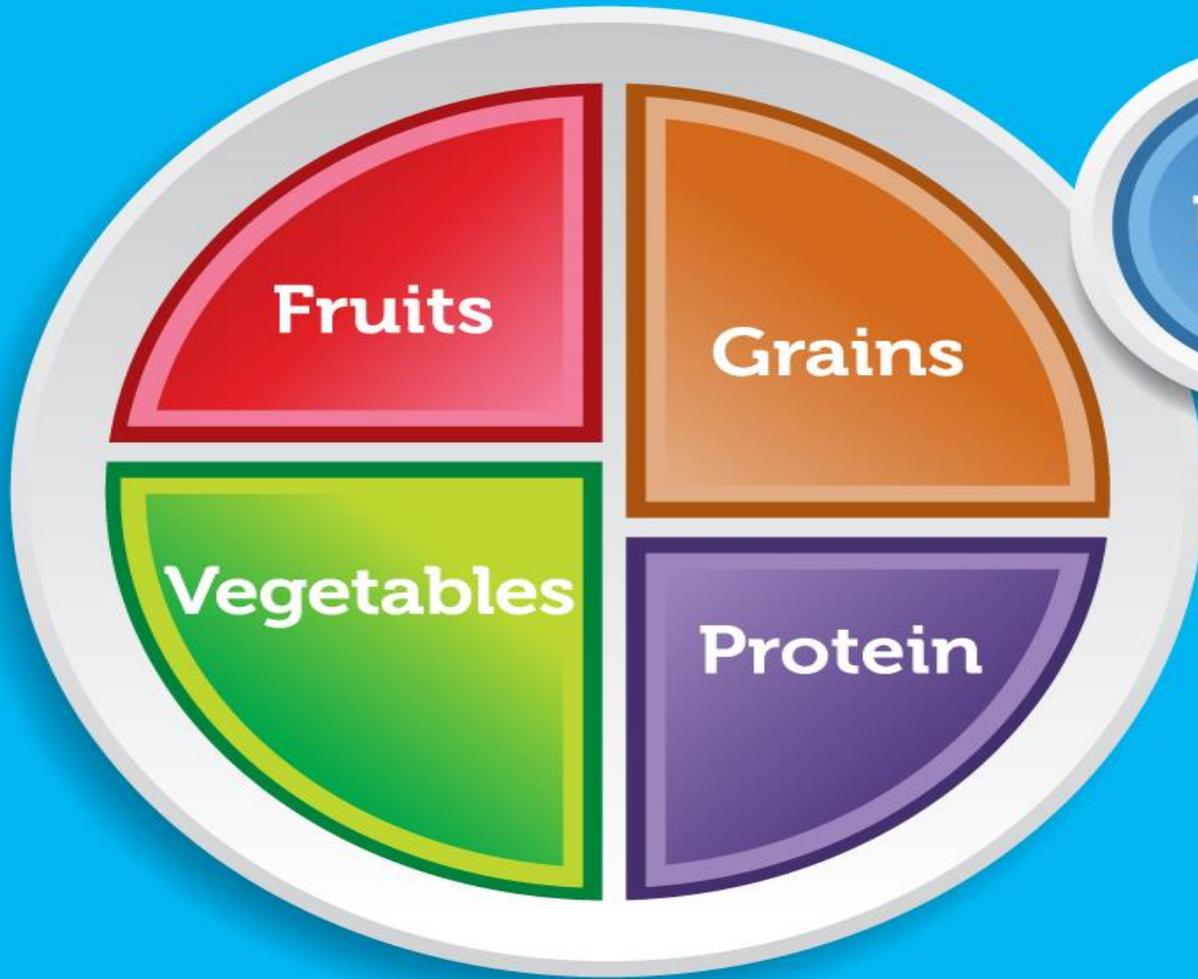
1 medium size potato = 58 kcal

1 medium size tomato = 18 kcal

Total = 540 kcal



**Doughnuts (195 kcal),
croissants (210 kcal), pies
(410 kcal), cakes (up to
1500 kcal), brownies (110
kcal)**



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“If we are to walk in the light God has given us, we must educate our people, old and young, to dispense with these foods that are eaten merely for the indulgence of appetite. Our children should be taught to deny themselves of such unnecessary things as candies, gum, ice cream, and other knickknacks, that they may put the money saved by their self-denial into the self-denial box, of which there should be one in every home. By this means large and small sums would be saved for the cause of God.”

E.G. White Counsels on Diet and Foods, p. 519



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