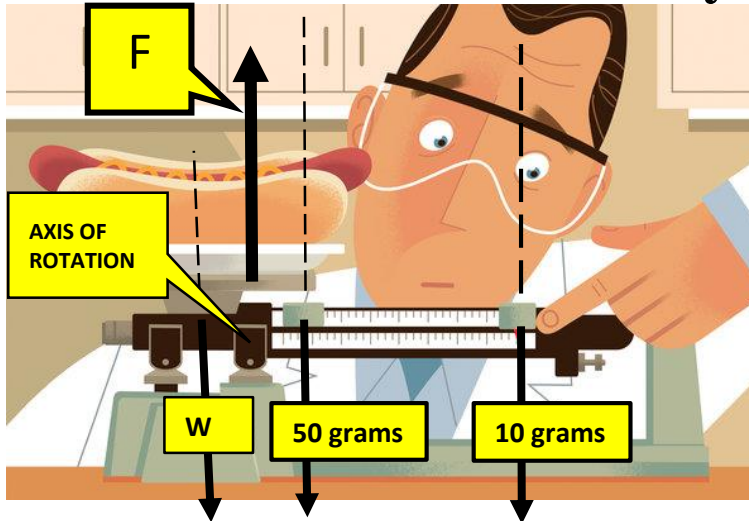


# ROTATIONAL EQUILIBRIUM

Unit 15 Dr. John P. Cise

Professor of Physics , Austin Com. College, 1212 Rio Grande St., Austin Tx. 78701 [jpcise@austincc.edu](mailto:jpcise@austincc.edu)  
& New York Times January 19, 2016 by Jane E. Brody

## What's New in the Dietary Guidelines



**INTRODUCTION:** From line of action of W to axis of rotation is 8 cm. From line of action of 50 gm. to axis of rotation is 4 cm.. From line of action of 10 gm. to axis of rotation is 28 cm. F is vertical and goes through axis of rotation.

**QUESTION:** Find F and W ? Use conditions for Static and rotational equilibrium to set up needed two equations.

**HINT:**  $\Sigma F_x = 0$  ,  $\Sigma \tau = 0$

**ANSWERS:** W = 60 grams , F = 120 grams

There's good news, and not-so-good news for some, in the new [Dietary Guidelines for Americans](#), released Jan. 7 by the Agriculture and Health and Human Services Departments. If, like me, you are a fan of **high-fat foods like nuts or avocados, high-cholesterol foods like shrimp or eggs, coffee or an occasional alcoholic drink, the new guidelines provide some additional reassurance. They emphasize the need to focus on a health-promoting eating pattern "across the life span" that includes these and other foods, in moderation, while (((cutting down on added sugar.)))** This means **diets with a rich variety of vegetables and fruits; whole grains; fat-free or low-fat dairy foods like milk, yogurt and cheese, and protein foods that contain little or no saturated fat, including eggs, shellfish, lean meat and poultry, beans and peas, soy products, nuts and seeds.** But **unsaturated fats like those in olive oil, nuts, avocados and fatty fish, as found in a traditional [Mediterranean diet](#), have been repeatedly linked to better health and longevity.** Including such fats in one's diet can facilitate weight management by reducing between-meal hunger and calorie-rich snacking. **Moderate consumption of coffee – a couple of cups a day — can be part of a healthful eating pattern.** Moderation is also urged with regard to alcohol, up to one drink a day for women and up to two for men. **But white rice and breads, cakes, cookies and pastries would take a hit if most Americans abided by the new guidelines.** Yet the new guidelines continue to urge people to **limit their consumption of saturated fats** to less than 10 percent of daily calories, and to **cut sodium** . **As for sodium**, there is little doubt that the amount currently in the American diet contributes to the gradual rise in **blood pressure** with age, which increases the risk of heart disease and stroke. Two decades ago, a friend of mine suffered a **heart attack shortly after eating a pastrami sandwich rich in both saturated fat and salt.** Yet the **(((new guidelines come down hard on added sugar, much of which Americans consume via soda and other sugar-sweetened drinks.)))** It is **not the natural sugar in dairy foods and fruits that undermine health so much as the sugars added to foods like ice cream and fruit drinks and the enormous array of dessert and snack foods that Americans consume.**