



آیت نمبر 25-28

قرآنی دعائیں

سورۃ غلہ

رَبِّ اشْرَحْ لِي صَدْرِي ۝ وَيَسِّرْ لِي أَمْرِي ۝  
وَاحْلُلْ عُقْدَةً مِّن لِّسَانِي ۝ يَفْقَهُوا قَوْلِي ۝

پروردگار، میرا سینہ کھول دے، اور میرے کام کو میرے لیے  
آسان کر دے اور میری زبان کی گرہ سلجھا دے تاکہ لوگ میری  
بات سمجھ سکیں

رَبِّ زِدْنِي عِلْمًا

MY LORD! INCREASE ME IN KNOWLEDGE.

# FAN-705. DIETETICS AND APPLIED NUTRITION

**M. Sc. (Hons). Food and Nutrition**

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# L # 11. FOOD GROUPS

## Outline

- **Food Groups**
- **Food Guide Pyramid**
- **My Pyramid**
- **My Plate**

# FOOD GROUP

“A food group is a collection of foods that share **similar nutritional properties** or **biological classifications**”.

- List of nutrition guides typically divide foods into **food groups** and **recommended dietary allowance** recommend daily servings of each group for a healthy diet.
- In the United States for instance, USDA has described food as being in from 4 to 11 different groups.

(Nestle, Marion (2013) [2002]. Food Politics: How the Food Industry Influences Nutrition and Health. University of California Press. pp. 36–37. ISBN 978-0-520-27596-6.)

# FOOD AND FOOD GROUPS

- Food is **essential** for providing **nutrients** like carbohydrates, proteins, fats, vitamins, minerals and other beneficial substances vital for human survival.
- **None of the foods** is capable of providing all the nutrients in an **adequate** amount to meet the body's requirements.
- Eating a **variety** of foods in **adequate amount** is the only way of nourishing the body.

# FOOD AND FOOD GROUPS - PAKISTAN

- On the basis of **nutritional** attributes, food may be divided into **six** groups that include **cereals, vegetables, fruits, milk** and **milk products, meat** and **pulses, fats** and **oils**.
- Each **food group** has a **unique nutrients composition** that is different in **quality** and **quantity** from other food groups.
- Fats and oils are included in the food group because they are **rich** source of **energy** and **essential fatty acids** for the body.

# FOOD GROUPS CLASSIFICATION

## FGs based on Functions

- **Energy** Giving – carbs, lipids, proteins
- **Growth** and **Repair** – proteins, minerals
- **Protective / Control** of Body Processes -  
proteins, minerals, vitamins, water

## FGs based on Consumption Patterns

- To **recommend** food **consumption**
- To **assess** food **intake**



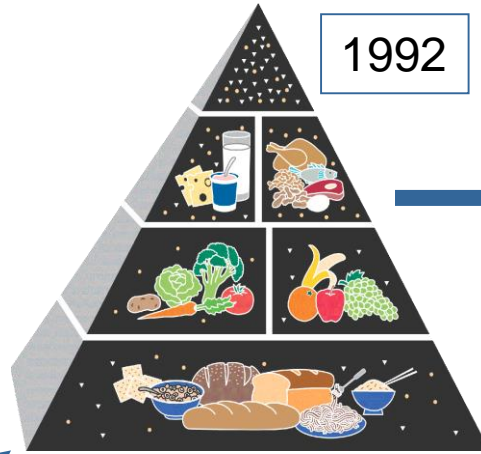
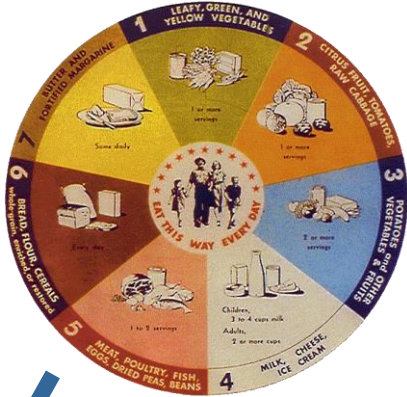
# HISTORY OF USDA'S FOOD GUIDANCE

- The USDA's first dietary guidelines were published in **1894** by **Dr. Wilbur Olin Atwater** as a **Farmers' Bulletin**
- Since then, the **USDA** has provided a variety of nutrition guides for the public, including
  - **The Basic 7 (1943–1956)**
  - **The Basic Four (1956–1992)**
  - **Food Guide Pyramid (1992–2005)**
  - **My Pyramid (2005–2011)**
  - **My Plate (2011-todate)**
- My Plate is the latest in over **110** years of nutrition guides from the USDA

# HISTORY OF USDA'S FOOD GUIDANCE

Food for Young Children

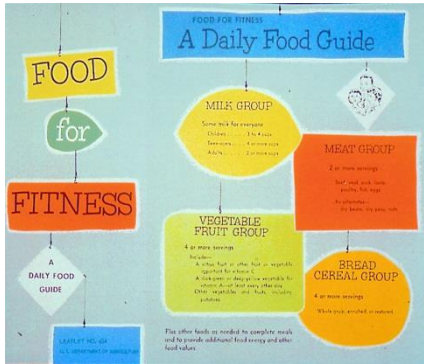
1916



2005

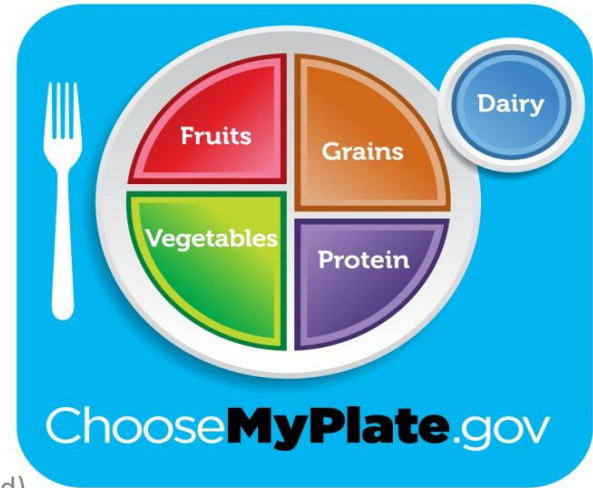


1970s

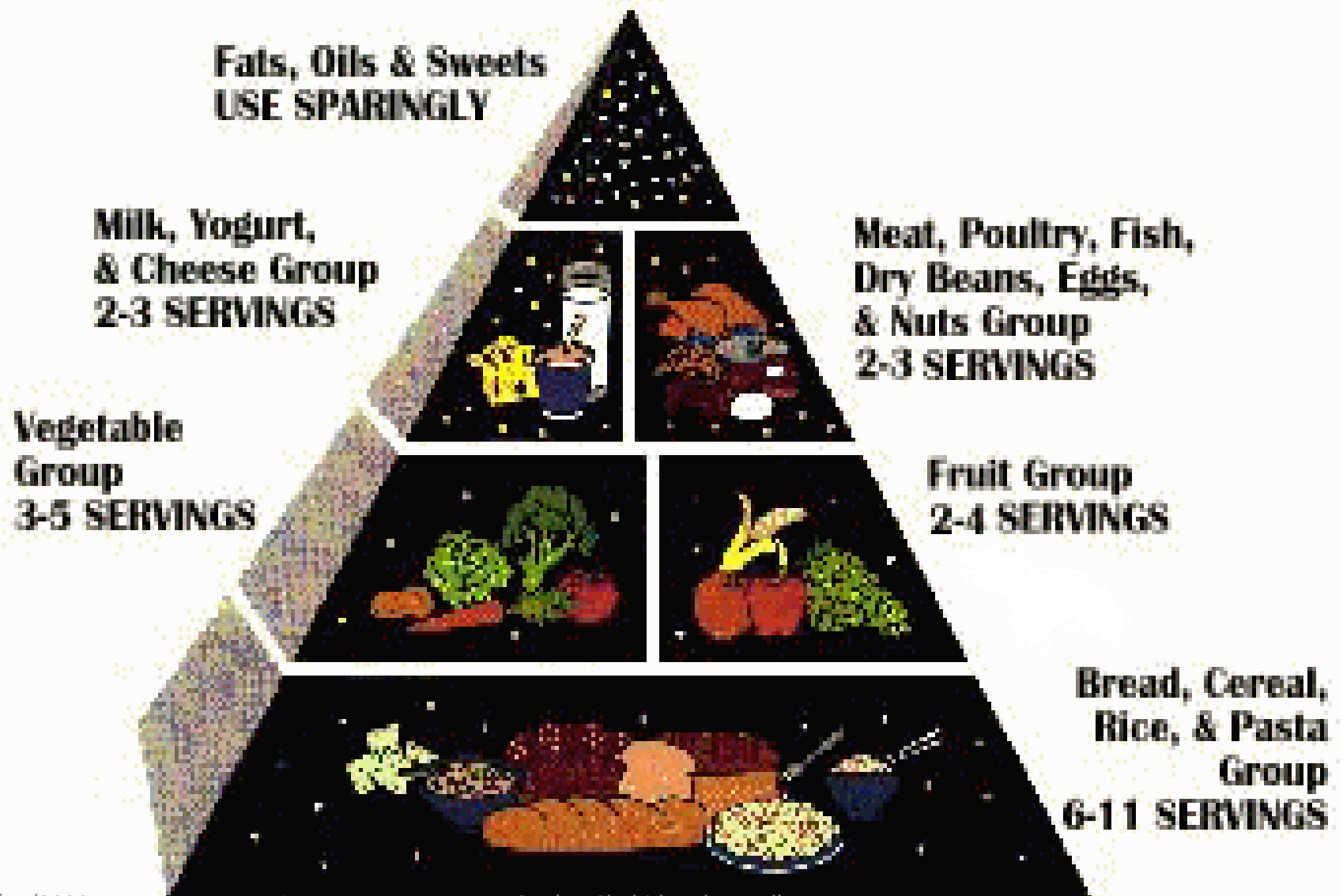


1950s-1960s

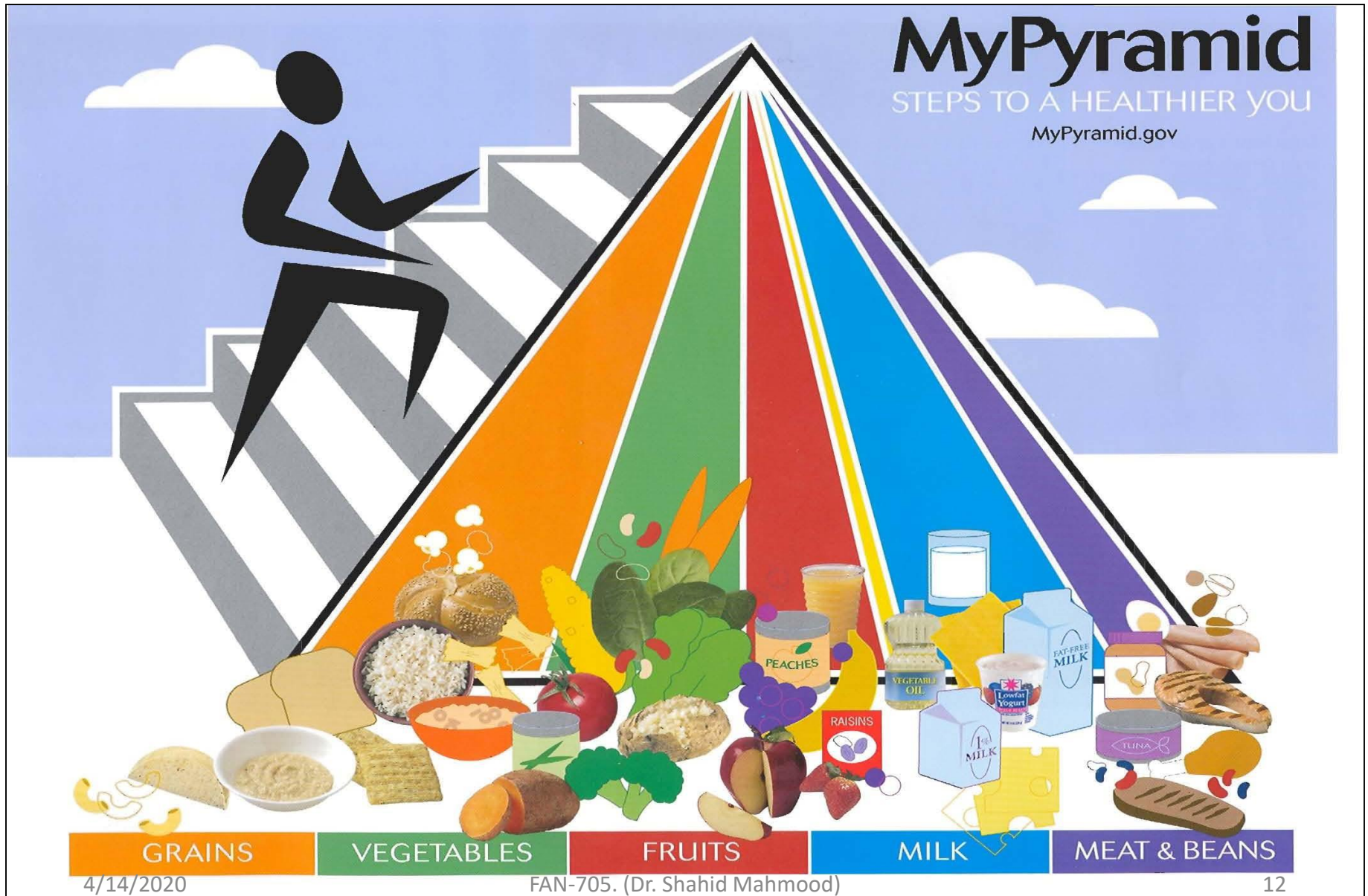
2011



# FOOD GUIDE PYRAMID (1992)



# MY PYRAMID (2005)



# MY PYRAMID (2005)

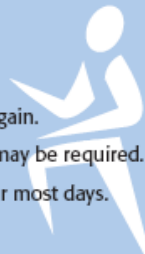
<b>GRAINS</b> Make half your grains whole	<b>VEGETABLES</b> Vary your veggies	<b>FRUITS</b> Focus on fruits	<b>MILK</b> Get your calcium-rich foods	<b>MEAT &amp; BEANS</b> Go lean with protein
<p>Eat at least 3 oz. of whole-grain cereals, breads, crackers, rice, or pasta every day</p> <p>1 oz. is about 1 slice of bread, about 1 cup of breakfast cereal, or 1/2 cup of cooked rice, cereal, or pasta</p>	<p>Eat more dark-green veggies like broccoli, spinach, and other dark leafy greens</p> <p>Eat more orange vegetables like carrots and sweetpotatoes</p> <p>Eat more dry beans and peas like pinto beans, kidney beans, and lentils</p>	<p>Eat a variety of fruit</p> <p>Choose fresh, frozen, canned, or dried fruit</p> <p>Go easy on fruit juices</p>	<p>Go low-fat or fat-free when you choose milk, yogurt, and other milk products</p> <p>If you don't or can't consume milk, choose lactose-free products or other calcium sources such as fortified foods and beverages</p>	<p>Choose low-fat or lean meats and poultry</p> <p>Bake it, broil it, or grill it</p> <p>Vary your protein routine — choose more fish, beans, peas, nuts, and seeds</p>

For a 2,000-calorie diet, you need the amounts below from each food group. To find the amounts that are right for you, go to [MyPyramid.gov](http://MyPyramid.gov).

Eat 6 oz. every day	Eat 2 1/2 cups every day	Eat 2 cups every day	Get 3 cups every day; for kids aged 2 to 8, it's 2	Eat 5 1/2 oz. every day
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## Find your balance between food and physical activity

- Be sure to stay within your daily calorie needs.
- Be physically active for at least 30 minutes most days of the week.
- About 60 minutes a day of physical activity may be needed to prevent weight gain.
- For sustaining weight loss, at least 60 to 90 minutes a day of physical activity may be required.
- Children and teenagers should be physically active for 60 minutes every day, or most days.



## Know the limits on fats, sugars, and salt (sodium)

- Make most of your fat sources from fish, nuts, and vegetable oils.
- Limit solid fats like butter, stick margarine, shortening, and lard, as well as foods that contain these.
- Check the Nutrition Facts label to keep saturated fats, *trans* fats, and sodium low.
- Choose food and beverages low in added sugars. Added sugars contribute calories with few, if any, nutrients.



U.S. Department of Agriculture  
Center for Nutrition Policy and Promotion  
April 2005  
CNPP-15



USDA is an equal opportunity provider and employer.

# MY PYRAMID (2005)

## Grains

- **Make half your grains whole** \*6 oz./day

## Vegetables

- **Vary your veggies** 2.5 cups/day

## Fruits

- **Focus on fruits** 2 cups/day

## Milk

- **Get your Calcium – rich foods** 3cup/day

## Meat and Beans

- **Go lean with protein** 5.5 oz./day

\* 2000 calories

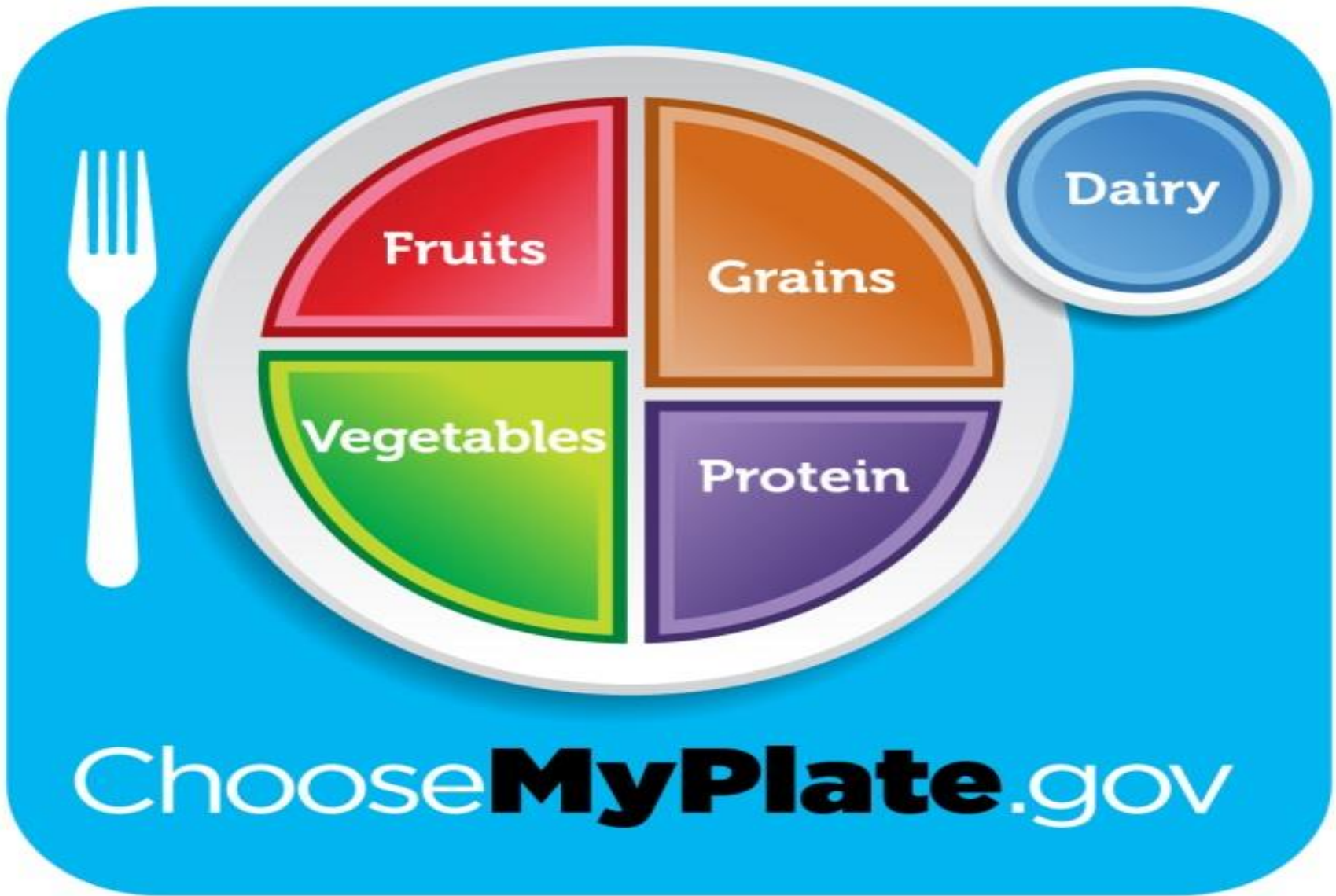
(1 oz. = 28.35 g; 1 cup = 4.5 oz. = 128 g)

# MY PYRAMID (2005)

Find your **Balance** between **Food (Calories)** & **Physical Activity**

- Be sure to stay within your **daily calorie needs**.
- Be physically active for at least **30 minutes** most days of the week.
- About **60 minutes** a day of physical activity may be needed to **prevent weight gain**.
- For **sustaining weight loss**, at least **60 to 90 minutes** a day of physical activity may be required.
- **Children** and **teenagers** should be physically active for **60 minutes** every day, or most days.

# MY PLATE (2011)





# MY PLATE (2011)

- Description of MP

# L # 12. DIET & DIETARY INTAKES

## OUTLINE

- **Diet / Dietary / Meal Planning**
- **Diet Therapy**
- **RDA, DRI, DV, AMDR**
- **Food Composition**

# DIET / DIETARY / MEAL PLANNING

“A diet plan is **tailored** to an **individual’s health** status, **weight** and **lifestyle**, along with their weight **loss** and health **goals**; tailoring of diet plan is called as diet / dietary / meal planning “.

- The diet plan becomes a bespoke template (specific) to steer the **eating behavior**, **exercise** and **lifestyle management** towards **optimal health** and **wellbeing**.

# DIET / DIETARY / MEAL PLANNING

## PRINCIPLES OF DIET PLANNING

1. Maintaining **adequate levels** of **energy**, **nutrients**, **movement** and **rest** for **optimal** health.
2. Balancing different **food groups**, and consuming foods in the **right proportion**
3. Consuming the **appropriate** number of **calories** to maintain a **healthy weight** depending on **metabolism** and **exercise** levels
4. Focusing on creating a diet that is **nutrient dense** without being high in **calories**
5. Learning how to be **moderate** with foods that are higher in **fat** or **sugar**
6. Exploring a **varied diet** that provides all the nutrients necessary for good health

(<https://weightmatters.co.uk/weight-management/diet-planning/>: 16-01-2020)

# HEALTHY EATING PLAN & CALORIES

“A healthy eating plan gives to body the **nutrients** it needs every day while staying within **daily calorie** goal for **weight loss** and lower the risk for **heart** disease and other health conditions”.

## Healthy Eating Plan:

- Emphasizes **vegetables**, **fruits**, whole **grains**, and **fat-free** or low-fat dairy products
- Includes **lean meats**, poultry, fish, beans, eggs, and nuts
- Limits **saturated** and **trans fats**, **sodium**, and **added sugars**
- Controls **portion sizes**

# HEALTHY EATING PLAN & CALORIES

## Calories

- To lose weight, reduce the number of calories get from food and beverages (**energy IN**) and increase physical activity (**energy OUT**).
- For a weight loss of **1–1 ½ pounds per week**, daily intake should be reduced by **500 -750 calories**.

### In general:

- Eating plans that contain **1,200–1,500 calories** each day will help most **women** lose **weight safely**.
- Eating plans that contain **1,500–1,800 calories** each day are suitable for **men** and for **women** who weigh **more** or who **exercise** regularly.
- Very low calorie diets of **fewer than 800 calories** per day should not be used unless being monitored by **dietitian**.

([https://www.nhlbi.nih.gov/health/educational/lose\\_wt/eat/calories.htm](https://www.nhlbi.nih.gov/health/educational/lose_wt/eat/calories.htm): 16-01-2020)

# L # 13. NUTRIENTS RECOMMENDATIONS

## OUTLINE

- **DRI, RDA, DV, AMDR**
- **Food Composition**

# NUTRIENT RECOMMENDATIONS

## DIETARY REFERENCE INTAKES (DRIs)

“Dietary Reference Intakes (DRIs) is a **set of nutrient intake values** used for **planning** and **assessing** diets including:

- **Estimated Average Requirements (EARs)**
- **Recommended Dietary Allowances (RDAs)**
- **Adequate Intakes (AIs)**
- **Tolerable Upper Limits (ULs)**



# DIETARY REFERENCE INTAKES (DRIs)

- The DRIs is a system of **nutrition** recommendations from the Food and Nutrition Board (**FNB**), Institute of Medicine (**IOM**) of the National Academies (**United States**).
- It was introduced in **1997** in order to broaden the existing guidelines known as Recommended Dietary Allowances (**RDAs**).
- The DRIs values differ from those used in **Nutrition Labeling on Food and Dietary Supplement** (products) in the **U.S.** and **Canada**, which uses **Reference Daily Intakes (RDIs)** and **Daily Values (% DV)** which were based on outdated RDAs from **1968** but were updated as of **2016**.

# DRIs: REFERENCE VALUES

## Estimated Average Requirements (EARs)

“EARs expected to satisfy the needs of **50 %** of the **people** in that **age** group **based** on a **review** of the scientific literature”.

# DRIs: REFERENCE VALUES

## Recommended Dietary Allowances (RDAs)

“RDAs the **daily** dietary intake level of a **nutrient** considered sufficient by the **Food and Nutrition Board** of the **Institute of Medicine** to meet the requirements of **97.5 %** of **healthy** individuals in each **life-stage** and **sex** group”.

- The definition implies that the intake level would cause a harmful nutrient deficiency in just **2.5 %**.
- It is calculated based on the **EARs** and is usually approximately **20 %** higher than the EARs.

# DRIs: REFERENCE VALUES

## Adequate Intake (AIs)

“Where **no RDAs** has been established, but the amount established is somewhat **less** firmly believed to be **adequate** for everyone in the demographic group”.

# DRIs: REFERENCE VALUES

## Tolerable Upper Intake Levels (ULs)

“ULs to **caution** against **excessive** intake of **nutrients** that can be harmful in large amounts; this is the **highest** level of daily nutrient consumption that is considered **to be safe** for, and cause no side effects in, **97.5 %** of healthy individuals in each **life-stage** and **sex** group”.

- The definition implies that the intake level would cause a harmful nutrient excess in just **2.5 %**.

# DRIs: REFERENCE VALUES

## Acceptable Macronutrient Distribution Ranges (AMDR)

“AMDR a range of intake specified as a **percentage** of **total energy** intake; used for sources of energy, such as fats and carbohydrates”.

- Carbohydrates **45 – 65 %** of total E
- Lipids **20 – 35 %** of total E
- Proteins **10 – 35 %** of total E

# ENERGY RECOMMENDATIONS

## Estimated Energy Requirement (EER)

“The **average** dietary **energy** intake that maintains energy **balance** in a healthy person of a given **age**, **gender**, **weight**, **height**, and **activity** level”.

# FOOD COMPOSITION

“Food composition data (**FCD**) are detailed **sets** of information on the **nutritionally** important components of foods and provide **values** for **energy** and **nutrients** including **protein, carbohydrates, fat, vitamins** and **minerals** and for other important food **components** such as fiber”.

- A knowledge of the **chemical composition** of foods is the **first essential** in **the dietary treatment** of disease or in any **quantitative** study of **human nutrition**



# FOOD COMPOSITION

- To this day, **food composition** studies remain **central** to **Nutrition Research** into the role of food **components** and their interactions in **health** and **disease**.
- However, due to increasing levels of sophistication and complexity in **Nutrition Science**, there is a greater **demand** for **complete**, **current** and **reliable FCD**, together with information on a wider range of food **components**, including **bioactive** compounds.

# FOOD COMPOSITION

FCD are important in many fields including

- Clinical Practice
- Research
- Nutrition Policy
- Public Health
- Education
- Food Manufacturing Industry

# FOOD COMPOSITION

FCD are used in a variety of ways including

- National programs for the **assessment of diet** and **nutritional status** at a **population** level
- Development of **therapeutic** diets
- **Institutional** diets
- Nutrition **labelling** of processed foods