

## STANDARDIZATION OF COOKED FOODS & SOME RAW FOODS FOR CONVERSION TO WEIGHTS OF THE RAW FOODS

**(Project to be taken up by RD Dietetic Interns at their respective Hospitals to develop an IDA Regional Database on the raw food weight equivalents of cooked foodstuffs. This will facilitate dietary and nutrient evaluation of patients)**

### **Aim of the Project:**

To standardize some commonly consumed cooked foods in terms of household measures and raw foods into equivalent weight of the raw foods.

### **Rationale:**

To ensure accuracy in diet planning and evaluation of the nutrient content of diets or intake of different food groups, it is essential to have an idea of

- one serving portion of the cooked foods for the various age groups
- the amount of these foods in terms of common household measures, used for eating or serving
- conversion of the amounts in household measures to the constituent weight of the raw foods

Commonly used household measures include large, medium or small *katoris*, bowls or cups, teaspoon, tablespoon and serving spoons. For ensuring accuracy of the standardization, the size of the container in terms of diameter and height or the volume must be known.

In case of food items like *chapatis*, *parathas*, *dosa*, *idli*, the size and thickness needs to be noted. For pulses and preparations like sambhar, the consistency and texture should be known. These details facilitate better assessment of the raw weights of the ingredients.

An idea of the weight of foodstuffs which maybe eaten raw, as related to their size, is also beneficial. For example, it is desirable to know the weight of a small, medium or large apple or any other fruit, a small or medium cucumber or other salad vegetables, a slice of bread or a bun, or a cup of milk.

### **Standardization:**

For standardization, known amounts of various raw foods need to be cooked to prepare various commonly consumed food items, in the traditional way of the concerned region. For cooking of the various food items, suggested amounts on an average could be 250ml milk, 30-60g pulse, 80-100g of most flesh foods, 80-100 g cereal and 200g vegetables. These weights refer to the edible food portion. An additional exercise could be documentation of the

edible content of different raw foods, especially vegetables or flesh foods. The food amounts used maybe varied based on the specific preparation and regional dietary patterns. It is important to note the amount of onion and tomato, if used, in the preparation, as also the amount of fat. Ginger and garlic are considered as free foods.

As an example, if 'cucumber *raita*' is to be standardized, 150 g of *curd* and 50-75 g cucumber could be taken and the *raita* made. From the amount made, the number of servings and size of serving need to be assessed. The consistency should also be noted. The data thus obtained will help to know the amount of *curd* and cucumber that goes into 1 serving of *raita*, of a specific consistency. This in turn will help in meal planning in terms of food amounts to use for one serving and also calculate the nutrient content of 1 serving, as nutrient content of various foods is given by ICMR in terms of edible portion of raw foods. Other food preparations may be standardized in a similar manner.

For deep fried food items, the approximate amount of fat/oil absorbed maybe assessed by weighing the frying pan with oil, before and after frying the food product. Use of a digital weighing scale or a spring balance with about 2-10 g sensitivity is recommended.

**For carrying out the standardization**, the same size of household (HH) utensils should be used across all hospitals recognized for RD, to ensure uniformity.

- Each intern could standardize 4-6 food items/ dishes, as decided by the internship In-charge. Each item must be standardized in duplicate, if not triplicate and the average values noted.
- The data generated and gathered by all the interns should be made available to the Chapter President.
- The recipe used for the preparation of the dishes should be documented with amounts of raw ingredients used (free foods could be left out)
- Regional, commonly used food items served in the hospital should be selected for standardization in the 1<sup>st</sup> stage. Subsequently, other regional food items could also be standardized.

### **Standardization Data Entry Format**

**Name of Intern:**

**Internship Period:** ----- to -----

**Hospital:**

**Chapter:**

**Food items standardized:**

Food group & preparation (name of recipe)	Raw ingredients	Weight of Raw ingredients (g)	Cooked Weight (g)	COOKED FOOD		General Observations (size, thickness, consistency etc)	Nutritive Value Per Serving				
				Size of 1 adult serving in Household measurement	Total no. of Servings in Household measures		Energy (Kcal)	Protein (g)	CHO (g)	Fat (g)	Dietary Fiber (g)
Milk & milk products											
1.											
2.											
3.											
Flesh foods											
1.											
2.											
3.											

## CALCULATIONS

An example using dry potato vegetable !

Raw weight of potato taken = 200g

Raw weight of onion taken = 60g

Weight of oil taken = 20g

- Cooked weight = .....g (*This information will help to determine the approximate amount of raw food required for a specific no. of serving portions or patients/persons*)
- Cooked amount in HH measures = 2.5 medium *katoris*
- **1 serving portion assessed as = 0.75 or ¾ medium *katori***
- Raw potato in 1 serving (¾ *katoris*) =  $200/2.5 \times 0.75 = \underline{60g}$
- Raw onion in 1 serving (¾ *katoris*) =  $60/2.5 \times 0.75 = \underline{18g}$
- Oil in 1 serving (¾ *katoris*) =  $20/2.5 \times 0.75 = \underline{6g}$

## SOME SUGGESTIONS FOR FOOD ITEMS TO BE STANDARDIZED WITH RAW FOOD AMOUNTS

(other items maybe standardized instead, based on regional diets!)

**Cooked/Prepared Food Items**

**Milk & milk products**

**Cucumber Raita**

- Curd 125g
- Cucumber 50g

**Boondiraita**

- Curd 125g
- Besan 30g
- Oil ??

**Rice/ VermecelliKheer**

- Milk 250ml
- rice/vermicelli 10g
- Sugar 15g

**Carrot/ Bottle Gourd Kheer**

- Milk 250ml
- Carrot/ bottlegourd 50g
- sugar 15g

**Fruit Custard**

- Milk 250g
- Custard powder 15g
- sugar 15g
- Fruit 100g

***Panir*Curry**

- Panir 50g
- Onion 20g
- Tomato 25g
- Oil 5g

**Flesh foods**

**Meat/Chicken Curry**

- Meat/chicken 100g
- Onion 50g
- Tomato 50g
- Oil 5-10g

**Pulses**

**Dry Dal**

- Pulse (eg. Bengal gram *dal*) 30g
- Oil 5g
- Optional*
- Onion
- Tomato

**Liquid texture *Dal***

- Red gram *dal* 30g
- Oil 5g
- Optional*
- Onion
- Tomato

***Sambhar***

- Red gram *dal* 30g
- Carrot 15g
- Pumpkin 15g
- Onion 15g
- Drumstick 15g
- Oil 5g

***Kadhi***

- *Besan* 30g
- *Curd* 100g
- Onion 20g
- Oil 5g
- Oil for frying balls ??

**Nutrinuggets in gravy**

- Soya Nutrinuggets 20g
- Onion 25g
- Tomato 25g
- Oil 5g

**Vegetables (A Group)**

**Dry Spinach/GLV *Bhujia***

- Spinach/ other GLV 200g
- Onion 20g
- Tomato 25g
- Oil 5g

**Spinach *Saag*(gravy)**

- Spinach/ other GLV 200g
- Onion 20g
- Tomato 25g
- Oil 5g

**Bottle Gourd Dry**

- Bottle gourd	200g
- Onion	20g
- Tomato	25g
- Oil	5g

### **Vegetables (B Group)**

#### **Potato Pea Curry**

- Potato	50g
- Shelled peas	50g
- Onion	20g
- Tomato	25g
- Oil	5g

#### **Dry Potato**

- Potato	100g
- Oil	5g

#### **Dry Ladies Finger**

- Ladies finger	100g
- Onion	25g
- Oil	10g

#### **Stuffed Tomato/Capsicum**

- Capsicum/tomato (whole)	50g
- Potato	50g
- Onion	20g
- Oil	20g

#### **Vegetable Pakora**

- Vegetable/ Potato	50g
- Gram flour ( <i>besan</i> )	30g
- Oil (for frying)	??

### **Cereals**

#### **Boiled Rice**

- Rice	100g
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#### **Khichri**

- Rice	70g
- Pulse	30g
- Oil	5g

#### **Chapati**

- Wheat flour ( <i>atta</i> )	100g
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#### **Paratha (stuffed)**

- Wheat flour	100g
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- Vegetable/potato	150g
- Oil	??
<b>Puri</b>	
-Wheat flour	100g
-Oil	5-10g
- Oil for frying	??

**Broken Wheat/ Semolina/Ragi Porridge**

- Cereal	20g
- Milk	250g
- Sugar	10g

**Upma/ Poha**

- Semolina/Rice flakes	40g
- Onion	20g
- Potato	30g
- Peanuts	5g
- Oil	5g

**RAW FOOD ITEMS (some examples)**

**Milk & Its Products**

Milk	1 medium , large cup 1 small, medium, large glass
Curd	1 medium <i>katori</i>
Panir	1 1/2" cube
Cheese	1 1/2" cube

**Animal Foods**

Egg	1 small, medium, large
Ham	1 thin slice
Cocktail sausage	1 link

**Pulses**

Raw pulse	1 medium <i>katori</i>
Green gram sprouts	1 medium <i>katori</i>

**Vegetables**

- Cucumber, Tomato, Onion, Potato, Capsicum, Carrot, Bitter gourd etc –  
1 small, medium, large
- Peas pods with shell: 20 in number
- Peas shelled 1 medium *katori*
- Spinach 1 small bunch with stalks  
1 small bunch with stalks removed

**Fruit**

- Banana, Apple, Pear, Mango, Sapota, Guava, Orange, Sweet lime, Lemo  
1 small, medium, large

- Musk melon            1 small, medium
- Water melon         1 small, medium
- Pineapple             1 slice
- Orange/ sweet lime juice    1small orange/sweet lime  
1 medium orange/ sweet lime

**Cereal**

- Bread                    1 medium slice, 1 largr slice
- Glucose/marie biscuits    4 pieces
- Salto biscuits            4 pieces
- Cookies                 4 pieces
- Cornflakes              1 medium *katori*

**Miscellaneous Items**

- Custard powder, sugar, fat/oil, butter, Jam, Jaggery, Groundnuts, Almonds etc  
1 teaspoon, 1 tablespoon

**Note:**

- Other food items and different food amounts maybe suggested
- Internship Incharge could allot food items to be standardized to interns
- Suggestions for size of household measures to be used may kindly be made, if those given here are not found suitable. **Uniform size and volume of HH measures must be used at all hospitals.**

**SIZES:**

*Sizes could vary a little but capacity or volume should remain the same across all hospitals for results to be comparable & standard. Ideally, the same size utensils should be used everywhere!*

*Comments on the HH measures to be used and their size and capacity please?!*

HH Measure	Size/Dimension	Volume (ml)
1. <i>Katori</i> medium	3"dia, 1 ½" ht	125ml
2. Glass large	2 ½" x 4 ½"ht x 2'	240ml
3. Glass medium	2 ¼" x 4"ht x 1 ¾"	200ml
4. Cup large	2 ¾" dia x 3 ½ " ht	250ml
5. Cup medium	2 ½" dia x 3" ht	200ml
6. Serving spoon/ <i>Karchi</i> large	2 ¾" dia, 1 ¼ " deep	50ml
7. Serving spoon/ <i>Karchi</i> medium	2 ¼ "dia, 5/8" deep	25ml
8. Serving spoon/ <i>Karchi</i> small	1 7/8" dia, 5/8" deep	15ml
9. 1 teaspoon	--	5ml
10. 1 tablespoon	--	15ml