



PACKED LUNCH/SNACK RECIPES FOR **ADOLESCENTS**



PACKED LUNCH/SNACK RECIPES FOR **ADOLESCENTS**

Contents

| | | | |
|---------------------------------|----|--|----|
| RATIONALE | 1 | SAGO CUTLETS | 15 |
| FRESHLY PREPARED RECIPES | | | |
| NORMAL WEIGHT | | | |
| EGG TOAST | 5 | POHA..... | 19 |
| VEGETABLE UTTAPAM | 7 | VEGETABLE UPMA..... | 21 |
| MOONG DAL CHEELA | 9 | ANEMIA | |
| UNDERWEIGHT | | | |
| POTATO STUFFED PARANTHA..... | 11 | CHOLIA PULAO | 23 |
| PANEER KATHI ROLL | 13 | VEGETABLE CUTLET..... | 25 |
| | | RAGI METHI POORI WITH MORINGA RAITA..... | 27 |



Important Instructions

1. Wash your hands with soap before cooking.
2. Cook your food on a medium flame.
3. While cooking, cover the utensils with their lids.
4. Wash the vegetables before cutting them, not after that.
5. While preparing rice & pulses, ensure that you soak them in water for around 15 minutes. Use the same water for cooking them.
6. Use vegetable oils. Avoid Vanaspati as it is harmful.

Rationale

Adolescence is a bridge between childhood and adulthood. During this period, adolescents attain their puberty. It is characterized by rapid increase in height and weight, metabolism, hormonal changes and sexual maturation. Hence, adolescents need a proper diet containing both body building and protective foods as they are important for growth spurt, maturation and bone development. Their diet should contain increased amount of energy and protein for increased muscle mass and minerals and vitamins for rapid growth of skeleton.

Mild to moderate micronutrient deficiencies can lead to impaired cognitive development, poor physical growth, increased morbidity and decreased work productivity in adulthood. Low calorie and protein intake may result in weight loss accompanying many health problems, such as fatigue, headaches, irritability, inability to concentrate; they are more likely to be ill and absent from school. On the other hand, adolescents consuming excess calories or having insufficient physical activity, may become obese with poor physical health, mental disorders, respiratory problems and glucose intolerance, all of which can track into adulthood. Literature also reports increase in anemia prevalence

among adolescents especially among girls. Anemia, not only affects the growth of the adolescents but also affect their attentiveness, memory and school performance. It also causes delay in onset of menarche and it can affect immune system leading to infections.

The Recommended Dietary Allowances (RDA) for adolescent boys of 10-12 years is 2190 kcal and 2750 kcal for 13-15 years, whereas protein requirement varies from 39.9 gm (10-12 years) to 54.3 gm (13-15 years). This gives an average of 2470 kcal and 47.1 gm protein for boys. The RDA for adolescent girls of 10-12 years is 2010 kcal and 2330 kcal for 13-15 years, whereas protein requirement varies from 40.4 gm (10-12 years) to 51.9 gm (13-15 years). This gives an average of 2170 kcal and 46.2 gm protein for girls. Keeping RDA for both boys and girls at an average of approximately 2320 kcal and 46.7 gm; 5 meals (3 major meals and 2 small meals) in a day are recommended. Major meals should provide 600 kcal and 12 gm protein, whereas small meals/snacks should provide approximately 250 kcal and >5 gm protein, with sufficient amount of micronutrients.

Table 1: RECOMMENDED DIETARY ALLOWANCES (RDA), 2010

| Nutrients | RDA for boys | | | RDA for girls | | |
|---------------------|--------------|-------------|-------------|---------------|-------------|-------------|
| | 10-12 years | 13-15 years | 16-17 years | 10-12 years | 13-15 years | 16-17 years |
| Energy (Kcal) | 2190 | 2750 | 3020 | 2010 | 2330 | 2440 |
| Protein (g) | 39.9 | 54.3 | 61.5 | 40.4 | 51.9 | 55.5 |
| Visible fat (g) | 35 | 45 | 50 | 35 | 40 | 35 |
| Iron (mg) | 21 | 32 | 28 | 27 | 27 | 26 |
| Vitamin C (mg) | 40 | 40 | 40 | 40 | 40 | 40 |
| Retinol (mcg) | 600 | 600 | 600 | 600 | 600 | 600 |
| Beta-carotene (mcg) | 4800 | 4800 | 4800 | 4800 | 4800 | 4800 |
| Calcium (mg) | 800 | 800 | 800 | 800 | 800 | 800 |



FRESHLY PREPARED RECIPES

Normal Weight



Egg Toast

Cost: Rs.10.98/-



Energy (Kcal) 257

Protein (g) 12.8

Carbohydrate (g) 22

Fat (g) 13.2

Total Fibre (g) 2.5

Beta carotene (mcg) 2640

Retinol (mcg) 99

Iron (mg) 2.7

Vitamin C (mg) 18

Calcium (mg) 83



Serving size: 2 toasts



Preparation time: 10-15 minutes



Ingredients

- ✔ Bread, brown: 40 g
- ✔ Egg: 50 g
- ✔ Groundnut: 7 g
- ✔ Drumstick leaves: 15 g
- ✔ Oil: 5 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Cumin seeds: 1/8 tsp
- ✔ Salt to taste

Method of preparation

- ✔ Boil drumstick leaves in 20 ml water for 5 minutes. Mash well.
- ✔ Roast and crush groundnut.
- ✔ Break egg in a bowl. Add roasted groundnut, green chilli, cumin seeds, salt and mashed drumstick leaves.
- ✔ Mix all ingredients well.
- ✔ Apply this mixture on bread pieces and cook on griddle using oil.
- ✔ Cut into pieces and serve hot with tomato *amla chutney*.



Vegetable Uttapam

Cost (Uttapam):
Rs.8.96/-

**Cost (Tomato Amla
Chutney):** Rs.5.59/-



| | Uttapam | Chutney |
|---------------------|---------|---------|
| Energy (Kcal) | 216 | 34 |
| Protein (g) | 5.2 | 0.6 |
| Carbohydrate (g) | 25 | 7 |
| Fat (g) | 10.4 | 0.1 |
| Total Fibre (g) | 3.1 | 2.3 |
| Beta carotene (mcg) | 317 | 757 |
| Iron (mg) | 1 | 0.8 |
| Vitamin C (mg) | 12 | 76 |
| Calcium (mg) | 16 | 15 |



Serving size: 2 medium



Preparation time: 20-25 minutes



Ingredients

For *Uttapam*

- ✔ Rice: 20 g
- ✔ Black gram *dal* dehusked: 10 g
- ✔ Onion, big: 20 g
- ✔ Tomato: 20 g
- ✔ Peas, green: 10 g
- ✔ Oil: 10 g

For Tomato *Amla* Chutney

- ✔ Tomato: 50 g
- ✔ *Amla*: 25 g
- ✔ Jaggery: 5 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Red chilli: 1/8 tsp
- ✔ Turmeric powder: 1/8 tsp
- ✔ Fenugreek seeds: 1/8 tsp
- ✔ Mustard seeds: 1/8 tsp
- ✔ Salt to taste

Method of preparation

- ✔ Soak rice and *dal* separately overnight. Grind separately.
- ✔ Mix the ground rice and black gram *dal*, add salt.
- ✔ Slice onion, chop tomato, green chilli.
- ✔ Heat griddle and grease it with oil. Pour a ladleful of mixture over it thinly.
- ✔ Add chopped vegetables, peas on the top of the mixture and add little salt over the top.
- ✔ Pour little oil on the edges and cover *uttapam* for 5 minutes.
- ✔ Fry on both sides to golden brown. Serve with tomato-*amla* chutney.

Preparation of Tomato *Amla* Chutney

- ✔ Boil *amla* in 1 cup water.
- ✔ Wash and chop tomato.
- ✔ In a *karahi*, add chopped tomato, boiled *amla*, red chilli powder, turmeric powder, salt, fenugreek seeds, mustard seeds and water.
- ✔ Cover and cook till above mixture turn to thick mixture.
- ✔ Mash the above cooked mixture with ladle.
- ✔ Add jaggery and mix well.



Moong Dal Cheela

Cost: Rs.17.96/-



| | |
|---------------------|------|
| Energy (Kcal) | 262 |
| Protein (g) | 10.3 |
| Carbohydrate (g) | 27 |
| Fat (g) | 12 |
| Total Fibre (g) | 4.8 |
| Beta carotene (mcg) | 861 |
| Iron (mg) | 2.7 |
| Vitamin C (mg) | 13 |
| Calcium (mg) | 95 |



Serving size: 3 *cheelas*



Preparation time: 15-20 minutes



Ingredients

- ✔ Moong *dal* dehusked: 20 g
- ✔ Amaranth flour: 10 g
- ✔ *Besan*: 15 g
- ✔ *Bathua* leaves: 25 g
- ✔ Carrot, red: 20 g
- ✔ Oil: 10 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Salt to taste

Method of preparation

- ✔ Wash the *dal*. Cook *dal* with little water.
- ✔ Wash and cook *bathua* leaves in small amount of water. Mash once done.
- ✔ Wash and grate carrot. Chop green chilli.
- ✔ To the mashed *dal*, add amaranth flour, *besan*, grated carrot, chopped green chilli and mashed *bathua* leaves. Add salt.
- ✔ Add water to the above mixture and make pouring consistency batter.
- ✔ On hot griddle, add oil and pour batter and cook.
- ✔ Serve hot with tomato *amla chutney*.

Underweight



Potato Stuffed Parantha

Cost: Rs.12.01/-



| | |
|---------------------|------|
| Energy (Kcal) | 269 |
| Protein (g) | 10 |
| Carbohydrate (g) | 42 |
| Fat (g) | 10.1 |
| Total Fibre (g) | 4.9 |
| Beta carotene (mcg) | 3 |
| Iron (mg) | 1.9 |
| Vitamin C (mg) | 16 |
| Calcium (mg) | 161 |



Serving size: 1 medium



Preparation time: 20-25 minutes



Ingredients

- ✔ Wheat flour whole: 30 g
- ✔ Potato, brown skin, big: 60 g
- ✔ Onion, big: 15 g
- ✔ *Paneer*: 30 g
- ✔ Oil: 5 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Salt to taste

Method of preparation

- ✔ Boil the potatoes, peel and mash them well.
- ✔ Add mashed *paneer*, chopped onion, salt and green chilli in the mashed potatoes.
- ✔ Make a stiff dough. Make a depression in the centre of the dough and fill in the above mixture.
- ✔ Roll into a flat round using oil.
- ✔ Serve hot with tomato-*amla chutney*.



Paneer Kathi Roll

Cost: Rs.14.15/-



| | |
|---------------------|------|
| Energy (Kcal) | 264 |
| Protein (g) | 9 |
| Carbohydrate (g) | 21 |
| Fat (g) | 15.7 |
| Total Fibre (g) | 4.5 |
| Beta carotene (mcg) | 281 |
| Iron (mg) | 2 |
| Vitamin C (mg) | 2 |
| Calcium (mg) | 174 |



Serving size: 1 medium



Preparation time: 20-25 minutes



Ingredients

- ✔ Wheat flour whole: 20 g
- ✔ *Besan*: 5 g
- ✔ *Paneer*: 25 g
- ✔ Sesame seeds, white: 3 g
- ✔ Onion, big: 20 g
- ✔ Carrot, red: 10 g
- ✔ Oil: 10 g

Condiments and Spices

- ✔ Salt to taste

Method of preparation

- ✔ Mix wheat flour and *besan*. Make a stiff dough.
- ✔ Roll into a flat round *kathi* and on hot griddle, grease *kathi* both sides using oil. Cook till golden brown at both sides.
- ✔ Wash, peel and dice carrot. Chop onion finely.
- ✔ Roast sesame seeds. Mix them with mashed *paneer* and vegetables and add salt as per taste.
- ✔ Pour this mixture on top of the cooked *kathi* and make a roll.



Sago Cutlets

Cost: Rs.8.29/-



| | |
|---------------------|------|
| Energy (Kcal) | 266 |
| Protein (g) | 5.2 |
| Carbohydrate (g) | 31 |
| Fat (g) | 13.2 |
| Total Fibre (g) | 1.1 |
| Beta carotene (mcg) | 2 |
| Iron (mg) | 0.9 |
| Vitamin C (mg) | 14 |
| Calcium (mg) | 104 |



Serving size: 2 cutlets



Preparation time: 20-25 minutes



Ingredients

- ✔ Potato, brown skin, big: 50 g
- ✔ *Sago*: 20 g
- ✔ *Paneer*: 20 g
- ✔ Wheat flour, refined: 5 g
- ✔ Oil: 10 g

Condiments and Spices

- ✔ Green chilli: 3 g
- ✔ Red chilli: 1/4 tsp
- ✔ Salt: 1/2 tsp

Method of preparation

- ✔ Boil potato, peel and mash.
- ✔ Soak *sago* for 30 minutes. Drain.
- ✔ Chop green chilli and mash *paneer*.
- ✔ Mix above ingredients with seasonings.
- ✔ Make a paste of refined flour with 5 ml water.
- ✔ Make cutlet shape and roll in refined flour paste.
- ✔ Heat oil in a pan and shallow fry.
- ✔ Serve hot with tomato-*amla chutney*.

Obesity



Sprouted Dal Parantha

Cost: Rs.6.46/-



| | |
|---------------------|------|
| Energy (Kcal) | 259 |
| Protein (g) | 10.4 |
| Carbohydrate (g) | 42 |
| Fat (g) | 5.9 |
| Total Fibre (g) | 9.6 |
| Beta carotene (mcg) | 227 |
| Iron (mg) | 3.2 |
| Vitamin C (mg) | 11 |
| Calcium (mg) | 47 |



Serving size: 1 medium



Preparation time: 20-25 minutes



Ingredients

- ✔ Wheat flour whole: 40 g
- ✔ Green gram sprouts: 25 g
- ✔ Onion, big: 20 g
- ✔ Oil: 5 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Coriander leaves: 5 g
- ✔ Salt to taste

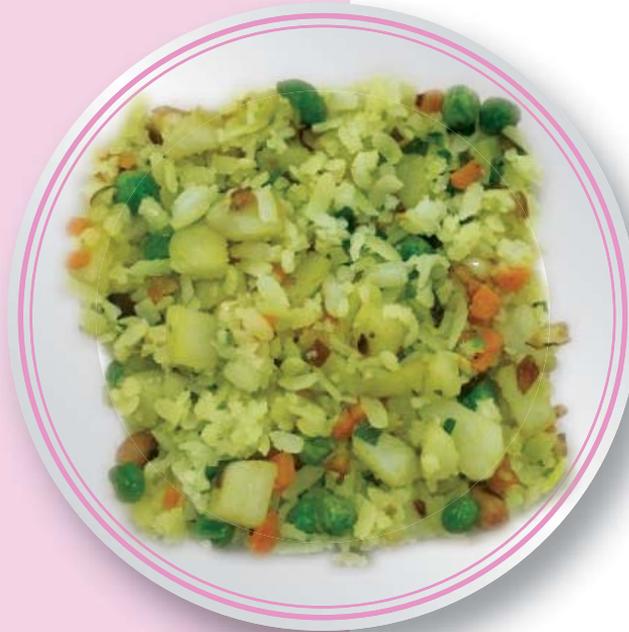
Method of preparation

- ✔ Steam green gram sprouts for a few minutes. Mash a little.
- ✔ Add salt, coriander leaves, chopped onion and green chilli.
- ✔ Make a dough. Make a depression in the centre of the dough and fill in the above mixture.
- ✔ Roll into a flat round using oil.
- ✔ Serve hot with tomato-*amla chutney*.



Poha

Cost: Rs.9.01/-



Energy (Kcal) 268

Protein (g) 6.7

Carbohydrate (g) 38

Fat (g) 9.6

Total Fibre (g) 4.3

Beta carotene (mcg) 286

Iron (mg) 2.5

Vitamin C (mg) 8

Calcium (mg) 22



Serving size: 1 *katora*



Preparation time: 15-20 minutes



Ingredients

- ✔ Rice flakes: 40 g
- ✔ Potato, brown skin, big: 10 g
- ✔ Groundnut: 10 g
- ✔ Carrot, red: 10 g
- ✔ Onion, big: 20 g
- ✔ Peas, green: 10 g
- ✔ Oil: 5 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Mustard seeds: 1/8 tsp
- ✔ Red chilli: 1/8 tsp
- ✔ Salt: 1/4 tsp
- ✔ Turmeric powder: 1/8 tsp
- ✔ Lemon juice: 5 ml

Method of preparation

- ✔ Boil, peel and cut potatoes into small pieces.
- ✔ Dice carrot and shell peas. Chop onion and green chilli.
- ✔ Roast groundnut.
- ✔ Wash rice flakes in a strainer. Allow it to drain.
- ✔ Heat oil, add mustard seeds. When they crackle, add groundnut and chopped onion. Fry to golden brown colour. Add vegetables. Fry for 2 minutes.
- ✔ Add rice flakes, red chilli and salt. Cook on slow fire for 2-3 minutes.
- ✔ Turn off gas and sprinkle green chilli and lemon juice and serve hot.



Vegetable Upma

Cost: Rs.9.16/-



Energy (Kcal) 255

Protein (g) 8.2

Carbohydrate (g) 33

Fat (g) 9.4

Total Fibre (g) 6.8

Beta carotene (mcg) 289

Iron (mg) 1.9

Vitamin C (mg) 8

Calcium (mg) 29



Serving size: 1 *katora*



Preparation time: 15-20 minutes



Ingredients

- ✔ Semolina (*sujji*): 40 g
- ✔ Groundnut: 10 g
- ✔ Onion, big: 20 g
- ✔ Carrot, red: 10 g
- ✔ Peas, green: 10 g
- ✔ Oil: 5 g

Condiments and Spices

- ✔ Ginger, fresh: 3 g
- ✔ Green chilli: 2 g
- ✔ Mustard seeds: 1/8 tsp
- ✔ Red chilli: 1/8 tsp
- ✔ Lemon juice: 5 ml
- ✔ Salt to taste

Method of preparation

- ✔ Dice carrot and shell peas (green). Chop onion and green chilli.
- ✔ Roast groundnut and semolina in separate pan. Keep aside when done.
- ✔ Heat oil, add mustard seeds. When they crackle, add groundnuts and chopped onion. Fry to golden brown colour.
- ✔ Add vegetables, grated ginger and semolina. Fry for 2 minutes.
- ✔ Add water, red chilli and salt. Cook till the mixture is dry.
- ✔ Sprinkle green chilli and lemon juice and serve hot.

Anemia



Cholia Pulao

Cost: Rs.8.6/-



Energy (Kcal) 258

Protein (g) 6.3

Carbohydrate (g) 32

Fat (g) 2.2

Total Fibre (g) 6.4

Beta carotene (mcg) 1875

Iron (mg) 2.4

Vitamin C (mg) 15

Calcium (mg) 84



Serving size: 1 *katora*



Preparation time: 15-20 minutes



Ingredients

- ✔ Rice: 30 g
- ✔ Onion: 20 g
- ✔ Soaked *Cholia*: 15 g
- ✔ Fenugreek leaves: 20 g
- ✔ Oil: 10 g

Condiments and Spices

- ✔ Lemon juice: 5 ml
- ✔ Cardamom: 1 pod
- ✔ Cumin seeds: 1/4 tsp
- ✔ Salt: 1/4 tsp

Method of preparation

- ✔ Clean and wash rice with water.
- ✔ Heat oil in a pan, add cardamom, cumin seeds and sliced onion.
- ✔ Fry till golden brown in colour. Add soaked *cholia* and saute for few minutes.
- ✔ Drain the rice and add to the onions and fry for 2-3 minutes.
- ✔ Add fenugreek leaves and measured amount of water and salt. Bring to boil.
- ✔ Cook covered till rice is done.
- ✔ Serve hot with tomato *amla chutney*.



Vegetable Cutlet

Cost:: Rs.13.01/-



| | |
|---------------------|------|
| Energy (Kcal) | 251 |
| Protein (g) | 5.3 |
| Carbohydrate (g) | 32 |
| Fat (g) | 2.1 |
| Total Fibre (g) | 4.8 |
| Beta carotene (mcg) | 2711 |
| Iron (mg) | 3.1 |
| Vitamin C (mg) | 48 |
| Calcium (mg) | 112 |



Serving size: 3 cutlets



Preparation time: 20-25 minutes



Ingredients

- ✔ Potato: 80 g
- ✔ Lotus root: 20 g
- ✔ Carrot: 20 g
- ✔ Amaranth leaves: 25 g
- ✔ Bread: 30 g
- ✔ Oil: 10 g

Condiments and Spices

- ✔ Green chilli: 2 g
- ✔ Salt to taste

Method of preparation

- ✔ Boil all vegetables and drain well.
- ✔ Peel potatoes and chop green chilli.
- ✔ Wash rice flakes in strainer and drain.
- ✔ Mash all the vegetables.
- ✔ Dip bread in water and squeeze.
- ✔ To the mashed vegetables, add bread, rice flakes, chopped green chilli, and salt.
- ✔ Divide the mixture in equal parts and shape into cutlets of desired shape.
- ✔ Shallow fry and serve hot with tomato *amla chutney*.



Ragi Methi Poori with Moringa Raita

Cost: (Ragi Methi
Poori) Rs.4.6/-

Cost: (Moringa raita)
Rs.1.37/-



| | Ragi Methi Poori | Moringa Raita |
|---------------------|------------------------|------------------|
| Energy (Kcal) | 240 | 25 |
| Protein (g) | 5.8 | 1.5 |
| Carbohydrate (g) | 16 | 2 |
| Fat (g) | 3.7 | 1.2 |
| Total Fibre (g) | 5.1 | 0.3 |
| Beta carotene (mcg) | 1882 | 0 |
| Retinol (mcg) | 0 | 8 |
| Iron (mg) | 2.8 | 0. |
| Vitamin C (mg) | 12 | 0 |
| Calcium (mg) | 112 | 47 |



Serving size: 3 *pooris*, and
1/2 *katori raita*



Preparation time: 10-15 minutes



Ingredients

For *Pooris*

- ✔ *Ragi*: 10 g
- ✔ *Besan*: 20 g
- ✔ Fenugreek leaves: 20 g
- ✔ Oil: 10 g

For *Moringa Raita*

Curd: 25 g
Drumstick flowers
(*moringa* flowers): 20 g

Condiments and Spices

- ✔ Black pepper: 1/4 tsp
- ✔ Salt to taste

Method of preparation

Preparation of *Pooris*

- ✔ Mix *ragi* and *besan*. Make a stiff dough.
- ✔ Wash and chop fenugreek leaves and cook them in a pan covered with a lid for 5 minutes.
- ✔ Mash the cooked leaves, salt and add in *ragi-besan* mixture.
- ✔ Make a stiff dough using water. Divide the dough to make *poori* balls.
- ✔ Roll each ball into a thin round using oil.
- ✔ Heat oil in *karahi* and fry each *poori* on both sides.
- ✔ Serve hot with *moringa raita*.

Preparation of *Moringa Raita*

- ✔ Boil drumstick flowers in 20 ml water and drain the water.
- ✔ Mix boiled flowers in curd. Add salt and black pepper.

This recipe book has been developed to address the gaps as highlighted in the CNNS thematic report
“Adolescents, Diets and Nutrition: Growing Well in a Changing World,” Issue 1, 2019.

This is a collaborative effort between National Centre of Excellence and Advanced Research on Diets,
Lady Irwin College and UNICEF India.

