HEXAGON NUTRITION

Nutrition Empowerment For Women Critical Role of Protein in Diet

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Says WHO?

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- Due to biological differences, women live longer than men in all regions of the world.
- India ranks 140 on the health index in world economic forum's Global gender gap report 2021, which benchmarks gender gaps in 156 countries on economic, political, education, and health-based criteria.

World Health Organization

NFHS- 5 REPORT

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- In India, 10 % of women have body mass index that is below the normal limits i.e., Less than 18.5 kg per sqm.
- Situation is severe in rural India where 21.2% of women are undernourished compared to urban India which is 13.2 %.
- 41.3% of women in India are overweight or obese i.e., They have a BMI of more than 25.0 kg per sqm
- In urban India, the situation is severe where 33.2% of women are overweight or obese.
- 19.7 % of rural Indian women were found to be overweight or obese.

NUTRITIONAL EMPOWERMENT

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- **The process by which individuals acquire the capacity to be well fed and healthy, in a context where this capacity was previously denied to them.**

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IMRB Report

- Indian Market Research Bureau (IMRB) survey to ascertain the levels of protein deficiency and awareness about protein in India showed
- 73 percent of urban rich is protein deficient with 93 percent of them unaware of their daily protein requirements.
- As per the nutrient requirements 2020, an Indian woman with a reference weight of 55 kg is recommended to have around 55 g of protein daily (a simple calculation of 1g/kg body weight)

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Proteins – Building Blocks

Proteins are the building blocks of life.

Every cell in the human body contains protein.
The basic structure of protein is a chain of amino acids.

You need protein in your diet to help your body repair cells and make new ones.

Protein is important for growth and development in children, teens, pregnant women etc

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Proteins – Building Blocks

- **Essential Amino Acids**

Cannot be made by the body, and must be supplied by external sources – food, supplements.

They do not need to be eaten at every meal. The balance over the whole day is more important

Eg- Leucine, Iso Leucine, Valine etc

- **Non Essential Amino Acids**

Are made by the body from essential amino acids or in the normal breakdown of proteins.

Eg- alanine, arginine, tyrosine etc

- **Conditionally Essential Amino Acids**

Are needed in times of illness and stress.

Eg- L-Glutamine

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Biological Value (BV) of Proteins

Biological value (BV) is a measure of the proportion of absorbed protein from a food which becomes incorporated into the proteins of the organism's body.

It captures how readily the digested protein can be used in protein synthesis in the cells of the organism

Choice of Protein ?

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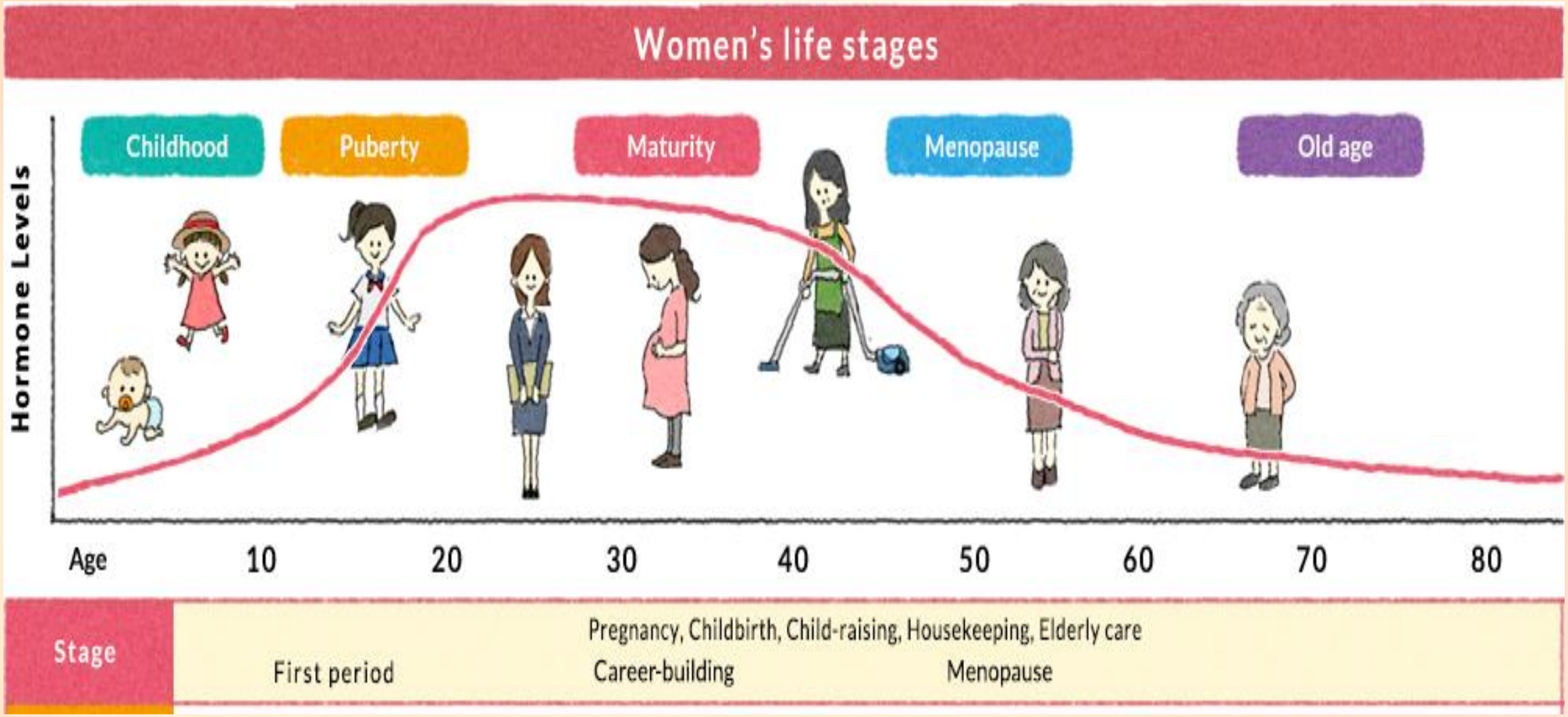

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Why WHEY

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Table 3: Quality of Protein 1				
	Protein Digested Corrected Amino Acid Score	Biological Value	Protein Efficiency Ratio	Net Protein Utilization
Whey Protein	1.0	104	3.2	92
Egg	1.0	100	3.9	94
Soy Protein	1.0	74	2.2	61
Casein	1.0	77	2.5	76
Milk	1.0	91	2.5	82

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Table 4: Amino Acid Profile of Different Proteins (Value per 100 g)[1]						
	Whey	Casein	Milk	Soy	Pea	Egg
Threonine	5.4	2.6	3.5	2.3	2.5	2
Methionine	1.8	1.6	2.1	0.3	0.3	1.4
Phenyalanine	2.5	3.1	3.5	3.2	3.7	2.3
Histidine	1.4	1.7	1.9	1.5	1.6	0.9
Lysine	7.1	4.6	5.9	3.4	4.7	2.7
Valine	3.5	3	3.6	2.2	2.7	2
Isoleucine	3.8	2.3	2.9	1.9	2.3	1.6
Leucine	8.6	5.8	7	5	5.7	3.6
Tryptophan	2.1	1.1	0.046	1.3	1	
Total Essential Amino Acids	36.2	25.8	30.446	21.1	24.5	16.5

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Table 5: Absorption rate of different types of protein	
Protein Source	Absorption rate (g/hour)
Whey Protein	8-10
Free Amino Acids	7-7.5
Casein	6.1
Soy Protein Isolate	3.9
Milk Protein	3.5
Egg Protein (Cooked)	2.8

Table 1: Types of Whey Protein[1]		
	Protein Concentration	**Applications**
Whey Protein Powder	11-14.5 %	Additive in dairy, bakery, confectionary and snack products.
Whey Protein Concentrate	25-89 % (Most Common 80%)	Contains more amount of biologically active components Negligible fat, lactose and minerals Suitable for food/Clinical Nutrition supplements for meeting protein gaps in the diet Contains bioactive peptides making it ideal protein for clinical applications
Whey Protein Isolate	90-95%	Significantly lesser fat and lactose. The isolated protein is easier to digest and has clinical applications and in sports industry. Contains bioactive peptides making it ideal protein for clinical applications
Whey Protein Hydrolysate	82-85%	Significantly lesser fat and lactose. The hydrolysed protein is easier to digest and has clinical applications Contains bioactive peptides making it ideal protein for clinical applications
Instantized Whey Protein	90-92%	Purest form of whey. Has applications in sports industry and clinical nutrition Contains bioactive peptides making it ideal protein for clinical applications

Nutrition for the Girl Child

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- Infant Nutrition
- Pediatric Nutrition – Fussy Eaters
- Nutrition for Adolescents- Growth Phase

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Nutrition during Pregnancy & Lactation

- Requirement of protein increases in pregnancy to around 1.5g/kg body weight during the second trimester, and up to 2g/kg body weight during the third trimester of pregnancy.
- During lactation too she needs additional protein intake. It is very crucial for women to take adequate amount of proteins during these phases for optimum growth and development of the baby as well as her health.

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Nutrition in Geriatrics (Senior Citizens)

- **Sarcopenia, a disorder that impacts ageing people where there's a progressive and generalized loss of skeletal muscle mass and strength.**
- **Muscle Loss cannot be prevented completely however you can slow it down by replenishing protein through diet and supplements.**
- **Choice and Quality of protein is of paramount importance.**
- **High Calorie and High protein Formulas preferred as volume tolerance is low**

Need for Meal Replacements (Obesigo)

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- **Provides satiety – high protein –high fiber**
- **Helps to burn fat through thermogenesis action of Whey Protein**
- **Ease of Use and Convenience- Balanced Low Calorie Diet.**
- **Contains the right amount of Micronutrients.**
- **Contains low amount of Carbohydrates & fats**

Making Women Nutritionally Empowered Via Micronutrient sprinkles

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- Sprinkles is a nutrition innovation that makes home fortification possible- Bioavalaible Encapsulated Fe-Fumarate.
- 1 gram sachet that can be easily mixed into any food prepared at home
- Does not alter the taste, colour or texture of the food to which it is added.
- Can enhance the nutritional quality of the food.

Impact Of Micronutrients Sprinkles On Weight And Height Of Children Aged 6-36 Months In Tonk District Of Rajasthan State

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- ✔ Trial was conducted in the 15 Angan wadi centers, each from Tonk (rural) and Malpura blocks of Tonk District in Rajasthan state.
- ✔ At baseline, children with severe underweight, severe stunting and severe wasting in experimental group stood at 19.2%, 19.3%, 7.3%, respectively, which declined to 14.9%, 15.3% and 6.3%, after intervention.

Source: Jyoti V, Sharma S. Impact of micronutrients sprinkle on weight and height of children aged 6-36 months in Tonk district of Rajasthan state. Indian J Community Health [Internet]. 2014 Dec. 31 [cited 2022 Apr. 9];26(Supp 2):294-9.

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Conclusion

- **We are a protein deficient population**
- **Proteins are building blocks of the body**
- **Requirements of Proteins at different stages of Female Lifecycle needs to be addressed.**
- **Whey protein is preferred**
- **Replenishment of protein at right time and in right quantity is imperative**

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THANK YOU

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