



## Healthy Diet: Smart Nutrients and Nutritional Disorder Dementia among Geriatrics

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### Abstract

*Smart Nutrients provide a detailed account of the most important break-through nutrients currently being hypothesized. These nutrients include niacin and Vitamin C, as well as minerals such as Zinc, Chromium and many others – each of which play a crucial role in the maintenance of mental health and the treatment of specific diseases. The prevalence of the dementia in developing countries was to be between 5-100% among geriatric population. Dementia is a clinical state in which acquired cognitive impairment produces dysfunctions in a person's occupational and social life. It was established that nutritional factor also contributes to increase this problem that is why it may be termed as "nutritional disorder dementia" among elderly. This paper aimed to assess the role of healthy diet including smart nutrients controlling nutritional disorder dementia among elderly. The validation cohort n=50 (Intervention Group) and n=10 (Control Group). The main finding of the paper was an intervention of healthy diet including smart nutrients containing ground nut and Citrus fruits among elderly subject (just retired from government jobs). It was observed that after intervention dementia patient those were malnourished become healthy and cured/controlled 64% patients, after a duration of six months. The calculated value of Chi-square was found much higher (16.4) as compared to table value at one degree of freedom (3.841) and five percent significant level. Therefore, null hypothesis rejected and alternate hypothesis accepted i.e. healthy dietary intake including smart nutrient containing peanut and vitamin C, controlling nutritional disorder dementia among geriatrics.*

**Keywords:** Healthy diet, smart nutrient, geriatric, nutritional disorder, dementia.

### Introduction

Nutritional therapy for brain wellness offers multiple levels of treating and preventing mental decline and neurodegenerative disorders. Some nutrients focus on free radical quenching and immune system support. Many stimulate improved cerebral circulation. While others preserve cell membrane integrity or promote neurotransmitter synthesis and release. Certain supplements work to restore balance to the biochemical environment of the brain. Some are essential for cellular energy production. Smart nutrient provides a detailed account of the most important break-through nutrients currently being studied. These nutrients include niacin and Vitamin C as well as minerals such as zinc, chromium and many others. Each of which plays a crucial role in the maintenance of mental health and the treatment of specific diseases<sup>1</sup>. Ground Nuts/Pea Nuts and highly nutritious, and while they are not nuts. They offer a benefit profile similar to nuts. Nutrients: High or significant for manganese, tryptophan, vitamin B<sub>3</sub> (niacin), Folate, Vitamin B, Copper, Protein. Fat: High in heart healthy monounsaturated fats, not as high as olive oil but may better than most vegetable oils. Antioxidants: High in antioxidants, including resveratrol (The grape skin antioxidants) Roasting increases the amount of antioxidant P- coumaric acid about 22% absorption forms the

shell. These antioxidants are very important to heart health. Calories: Dry roasted groundnuts have only about 166 Calories per ounce. They are not considered a contributor to weight gain unless overdo them, In fact they may contribute to weight loss by satisfying hunger fairly quickly. Coenzyme Q10: Ground nut are a source of coenzyme Q10 as are oily fish, beef, soya beans, and spinach. It was hypothesized many times that a diet, including niacin rich foods slows the onset of Alzheimer and other forms of age related cognitive decline. Groundnut/Peanut are relatively high in niacin including citrus fruits that leads to assess the role of smart nutrient along with healthy dietary practices for controlling and curing Nutritional Disorder Dementia too. The Nutritional Disorder Dementia was a disorder that to be assessed and this paper was an efforts to fulfill the aforesaid aspects. Geriatric nutrition applies nutrition principle to delay effects of ageing and disease, to aid in the management of the physical, psychological and psycho-social changes commonly associated with growing old. Dementia is a clinical state in which acquired cognitive impairment produces dysfunction in a person's occupational and social life. According to Diagnostic and Statistical manual Disorder, III-R Criteria for diagnosis of dementia are<sup>4</sup>:

Impaired short and long term memory with: One other cognitive disturbance must be present. Impaired abstract thinking, impaired judgement, personality changes, Others (Apraxia, Aphasia and Agnosia). Impairment should significantly interfere with occupational and social functioning. Either of the two: An Etiology related organic disorder by history/examination/ investigation, Exclude major depression or psychiatric illness as a cause.

The prevalence of dementia in developing countries to be between 5-10% among geriatric population. There are about 70 causes of dementia. Alzheimer disease is most common and is present in more than 60% of dementia patients. In other group of 50% approx., it is important to recognize about 25% patients of Reversible Dementia including Vascular, Drug, Alcohol and Nutrition. To identify nutritional disorder dementia it should be essential the causes of dementia first of all asses. Nutritional status by 24 hrs dietary recalls i.e. food frequency table.BMI, Patients Hb%, S. Albumin level, TIBC. etc.

### Algorithm of the Clinical Approach

**Dementia:** i. Dementia of Alzheimer type, ii. Non Alzheimer type - Non vascular cause, Vascular Dementia.

Neurodegenerative, Reversible, Primary with movement Disorder, Primary as Dementia, Parkinson's Disease-Picks, Parkinson Plus - Fronto temporal Dementia, Huntington Chorea – DLBD, Wilson disease –Prior.

**Medical:** Infections – HIV, Non HIV, Inflammation, SLE and others, Nutritional, Endocrinological, Metabolic, Toxic, Drug, Alcohol.

**Surgical:** Trauma, Tum or, Hydrocephaline<sup>2</sup>. Thus Nutritional disorder dementia may be defined as non-alzheimer type, non-neurodegenerative and non-reversible dementia due to either Vitamin-B deficiency, malnutrition, antioxidants deficiency or any other nutritional deficiency ultimate cause for dementia in mini mental test examination (MMTE).

**Table-1**  
**Age and Sex Wise Distribution**

Age group/Sex	Male		Female		Total	
	No.	%	No.	%	No.	%
60-65	13	26	8	16	21	42
65-70	7	14	5	10	12	24
70-75	5	10	4	8	9	18
75 +	5	10	3	6	8	16
Total	30	60	20	40	50	100

**Objective of the Paper:** The main objective of the paper was “to assess the role of healthy dietary intake including smart nutrient containing groundnut/peanut with citrus fruits on prevention and controlling nutritional disorder dementia among elderly.

**Study Methods:** The study was carried at Lucknow city, 50 subjects were selected for intervention group including 30 male and 20 female and 10 samples for control group.

**Parameter:** Nutritional Assessment on 24 hrs dietary recall. S Albumin Level, Hb %.

**MMTE Scale<sup>3</sup>: Characteristics:** Language, Memory, Visiospatial, Calculation, Front System Ability, Speed of Cognition, Speech, Gait and Posture, Movement Disorder.

### Conclusion

The changes in general hygiene status of the subjects was found excellent and satisfactory after intervention. The decrease in intoxicant users was also observed satisfactory. The changes in nutritional intake were also observed desirable in terms of average intake of food ingredients after intervention. The changes in MMTE was observed in 64 % in memory improved, sense of language ; 16%, visio-spatial; 14 % calculation 16 % judgment and reasoning; 14 % and others; 14 %. The overall changes in different component were observed by 64%. The calculated value of chi square was found much more higher (16.4) as compared to table value (3.841) at one degree of freedom and 5.0 % significant level. Therefore null hypothesis rejected and alternate hypothesis accepted i.e. healthy dietary intake including smart nutrient containing groundnut<sup>5</sup> (niacin 22.0 g/100 gm) with vitamin C containing citrus fruits preventing, controlling and cure the nutritional disorder dementia among geriatrics. There were no changes observed in control group subjects.

**Table-2**  
**Academic Status**

Academic Status	Number	%
Illiterate	3	6
Literate	2	4
High School	9	18
Inter	13	26
Graduate	12	24
Post Graduate	10	20
Technical	1	2
Any other	-	-
	50	100

**Table-3**  
**Economic Status of Family**

Family Occupation	Number	%
Govt. Services	26	56
Pvt. Services	12	24
Business	8	16
Agriculture	4	8
Other Services	-	-
Any other	-	-
	50	100

**Table-5**  
**Obesity Status**

Obesity Status	Number	%
Under Weight	16	32
Healthy	20	40
Overweight	13	26
Obese I	1	4
Obese II	-	-
Obese III	-	-
Total	50	100

**Table-4**  
**Religion and Caste**

Religion and Caste	Number	%
Religion		
Hindu	36	72
Muslim	14	28
Others	-	-
Caste		
General	24	48
OBC	12	24
SC/ST	14	28
Total	50	100

**Table-6**  
**General Hygiene of Subjects**

General Hygiene	Below the mark		Upto the mark		Above the mark	
	No	%	No	%	No	%
Mouth Wash	3	6	36	72	11	22
Bathing	1	2	42	84	7	14
Clothing	-	-	50	100	-	-
Environment	11	22	34	68	5	10
Sanitation	6	12	41	82	3	6

**Table-7**  
**Diseased Status**

Name of Disease	Number	%
Diabetes	8	16
Hypertension	13	26
Kidney/Renal	1	2
Artheritis and Goitre	6	12
Arthera and Bronch.	5	10
Any other	-	-

**Table - 8**  
**Intoxicant Users**

Intoxicants	Before Intervention		After Intervention	
	No	%	No	%
Chewing Tobacco/Pan Masala	11	22	9	18
Smokes	9	18	6	12
Alc. Liquor	6	12	2	4

**Table-9**  
**Dentine**

Dentine	Number	%
Full teeth	21	42
Mixed	17	34
Full artificial	11	22
No teeth	1	2

**Table-10**  
**Nutritional Status**

Ingredients	Upto 25 gm	25-50 gm	50-100 gm	100-150 gm	150-200 gm	200-250 gm	Average Intake
Cereal	-	4	28	38	30	-	118
Pulses	4	96	-	-	-	-	42
Milk	-	-	10	82	6	2	124
Oils and Fats	8	92	-	-	-	-	44
Dairy Product	44	56	-	-	-	-	40
Poultry	-	12	-	-	-	-	40
Meat	-	-	24	-	-	-	68
Fruits	-	-	32	62	6	-	124
Vegetables	-	22	28	42	8	-	156
Sweets	22	28	42	8	-	-	66
Beverages	-	-	44	48	8	-	160
Fast and Junk Food	-	-	-	-	-	-	-
Nuts	22	-	-	-	-	-	17
Any other	-	-	-	-	-	-	-

**Table-11**  
**Average Intake**

Food	Before Intervention (gm/ml )	After Intervention (gm/ml)	Average changed
Cereal	118	210	+92
Pulses	42	50	+8
Oils and Fats	44	25	-19
Fruits	124	200	+76
Vegetables	156	200	+44
Meat	68	90	+22
Poultry	40	60	+20
Milk	124	220	+76
Dairy Product	40	60	+20
Beverages	160	200	+40
Sweets	66	25	-41
Fats and Junk Food	-	-	-
Nuts	17	20	+3
Ground Nuts	-	25	+25
Any other	-	-	-

**Table-12**  
**Liking of Food**

Food	%
Milk	20
Snacks	32
Sweets	28
Fruits	12
Vegetables	22
Beverages	42
Non Vegetarian	6
Alc. Liquor	12
Tea	86
Coffee	14

**Table-13**  
**Changes in Minimental Test Examination**

Component	Before Intervention	After Intervention
Memory loss	100	36
Sense of Language	28	12
Visio-spatial	22	8
Calculation	22	6
Judgement and Reasoning	28	14
Others	22	8

**Table-14**  
**Anaemia and PEM**

Investigation	No.	%
Hb % upto 7	16	32
8-10	9	18
10-12	15	30
12-14	10	20
Anaemia	11	22
PEM		
73.4	6	16
3.0-3.3	7	14
13.0	11	22

**Table-15**  
**Nutritional Value**

Ground Nut/Pea nut, Valencia, raw Per 100gm (3.50g)			
Energy	570kcal	Thiamine (Vit. B <sub>1</sub> )	0.6mg
Carbohydrates	21gm	Riboflavin (Vit. B <sub>2</sub> )	0.3mg
Dietary fibre	9gm	Niacin (Vit. B <sub>3</sub> )	12.9mg
Glycine	1.512 gm	Pantothenic acid(Vit. B <sub>5</sub> )	1.8mg
Protein	1.107gm	Vitamin 6	0.3mg
Serine	1.236gm	Folate (Vit. B <sub>9</sub> )	246 mg
Water	4.26gm	Calcium	62mg
Fat	48gm	Iron	2mg
Monounsaturated	24gm	Cystine	0.322gm
Polyunsaturated	16gm	Phenylalanine	1.300gm
Saturated	7gm	Tyrosine	1.020gm
Protein	25gm	Valine	1.052gm
Tryptophane	0.2445gm	Arginine	3.001gm
Threonine	0.859gm	Histidine	0.634gm
Isoleucine	0.882gm	Alanine	0.997gm
Leucine	1.627gm	Aspartic Acid	3.060gm
Lycine	0.901gm	Glutamic acid	5.243gm
Magnesium	184mg	Potassium	332mg
Phosphorus	336mg	Zinc	3.3mg

Source: USDA Nutrient Database

**Table-16**  
**Intervention Guideline**

Healthy Dietary	Counseling
Calories	1600-2000 kcal
Carbohydrate	50-55 %
Protein	1 gm/kg body weight
Fat	30 %
Saturated	10 %
Vitamins and Mineral	as per norm

**Table-17**  
**Diet Plan**

<b>Food Group</b>	<b>Number of Servings</b>	<b>Serving Size</b>
Cereal (Breads, rice, flour or any other cereal)	6-8	25 gm dry weight
Pulses	2-3	25 gm dry wt.
Meat/Chicken/Fish/Mutton	1-1 ½	50 gm.
Poultry Egg	1	1 egg
Oils and Fats	4-6	One teaspoon
Vegetable Green	As desired	
Vegetable Other	1-1 ½	100 gm raw
Fruits-citrus only	2-3	100 gm
Milk	1-2	200 ml
Sweets	occasionally	
Yogurt	1-2	100 gm.
Nuts ( almond/walnuts)	10-15 no.	
Ground Nuts/Pea Nuts	25 gm. roasted	

## References

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