Janata Shikshan Sanstha's

KISAN VEER MAHAVIDYALAYA, WAI

Department of Zoology

LIST OF THE PROJECT

Class - B.Sc. III **Paper III** **YEAR - 2021-2022**

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5	5	17	KUDALE DIVYA RAMCHANDRA	
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7	7	49	PISAL SIDDHI YUVRAJ	Nutritional Information
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CERTIFICATE

This is to certify that following students of B.Sc. III have completed the report of the project work on **"Nutritional Information"** during the academic year 2021-2022 as partial fulfilment of the curriculum prescribed by the Shivaji University, Kolhapur.

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Examiner

NUTRITIONAL INFORMATION

Definition:

- Nutrition is the biochemical and physiological processes by which an organism use food to

  Support its life. Its include indigestion, absorption assimilation,

  Biosynthesis, Catabolism and Extraction

- The science that study about nutrition is known as nutritional science

Importance:

- Nutrition is the critical part of health and development.
- Better nutrition related to improve infant.
- Child and maternal health and strong immunity system
- Safer pregnancy and child birth
- Lower risk of non-communicable disease (such as diabetes and cardiovascular disease) and longevity
- Healthy children learn better

What is completed nutrition ? :

- What does nutritionally complete actually mean? A tube feeding formula is considered nutritionally complete if it's provide 100% recommended value of carbohydrates, protein, vitamin, fats, sugar and fats can be use at its own sole source of nutrition
- Following are the nutrition source

Carbohydrate

- Carbohydrates or carbs are the sugar molecule
- Carbohydrates are one of the three main nutrients found in food and drink
- Your body break down carbohydrates into glucose. Glucose or blood sugar are the main Source of energy for body cell's, tissue and organ

Which food contain carbohydrates?:

- Grain such as bread, noodles, pasta, crackers, cereal and rice
- Fruits such as Apple, Mangoes, Berries, Melons and orange
- Dairy produced such as milk and yolk
- Legumes, including dried beans lentils and peas

Disease occur due to deficiency of carbohydrates:

- Non-insulin dependent diabetic mellitus (NIDDM)
- Cardiovascular disease
- Cancer
- Gastrointestinal disease other than cancer
- Dental carries

Protein

- Proteins are essential nutrients for human body
- They are one of the building blocks of body tissue and also survived as a body fuels
- Protein provide as much energy density as carbohydrates 4kcal per gm
- In contrast lipids provide 9 kcal per gm

What are three type protein ?

- The three structure of protein are fibrous, globular and membrane which can also be broken by each protein Function

Which food contain protein ?

- Lean meats – Beef, Lamb, veal, pork, kangaroo
- Poultry – chicken, turkey, duck, emu, goose, blush birds
- Fish and seafood – Fish, prawns, crabs, lobsters, mussels, octopus, scallops and calms
- Eggs
- Dairy produced – Milk, yoghurt(specially Greek yoghurt) cheese (specially cottage cheese)

Disease occur due to deficiency of protein:

- Mainly there are two main syndrome associated with protein deficiency: Kwashiorkor and marasmus
    - Kwashiorkor effect million of children worldwide

Fats

- In nutrition, Biology, Chemistry fats are usually means any ester and fatty acid or mixture of a such

compound most commonly those that occurs in living being or in food

Why fats are important to our body :

- Dietary fats provide energy, protect organ maintain cell membranes and helps the body absorbs nutrients and provides essential fatty acids that plays a crucial role In the optimum function of body

High-fat food that offers a great benefit to our body :

- Avocados. Avocados are unique in the world of fruits
- Cheese. Cheese are surprisingly nutritious
- Dark chocolate
- Whole egg
- Fatty fish
- Nuts

Types of fats:

- There are three types of fats saturated fats, unsaturated fats and trans fats

Saturated fats:

- Saturated fats is a type of fats in which fatty acid have chain of all single bond .A fats know as a glyceride is made up of two kind of smaller molecules: a short glycerol backbone and fatty acid that each contain a long liner or branch chain of carbon atom

Unsaturated fats :

- Unsaturated fats is a type of fats in which fatty acid have all chain of double bond

Trans fats :

- Trans fats is also known as trans unsaturated fatty acid or fatty acid is a type of unsaturated fats that naturally occurs in milk fats and meat

Disease occur due to lack of fats :

- Inflammatory bowel disease, cystic fibrosis, pancreatic efficiency and extremely low fats diet

Disease occurs due to extreme fats intake:

- Greater fats intake is a major cause of obesity, hypertension, gallbladder disease and diabetes

Vitamins

- Vitamins are the organic molecules that are essential to the micro nutrients which and organism need in smaller quantity for the proper function of its metabolism
- Essential nutrients cannot be synthesized in the organism .either not at all in sufficient quantity and therefore must be obtain by diet.

What are the 13 types of vitamins:

- There are Essential vitamins - Vitamins such as A,C,D,E,K and the B vitamins(thiamine, riboflavin, pantothenic acid, Biotin, B6, B12 and folate)
- Vitamins have different jobs working properly

More vitamin rich food:

- Asparagus – High in vitamin A Beta carotene, lycopene
- Cheese – High in vitamin B2,B5, B12

- Shellfish – High in vitamin B2, B12, E
- Sweet potato – High in vitamin A, B5 and beta carotene

Deficiency disorder due to deficiency of vitamins:

- Vitamin A- loose vision
- Vitamin B1- Beriberi
- Vitamin C – Scurvy
- Vitamin D – Rickets
- Calcium – Bone and tooth decay
- Iodine – Goiter

Cholesterol

Cholesterol is a waxy, fat like structure that occurs naturally in body.

Its play a vital role in how every cell works and every single cell needs a contain cholesterol

Is cholesterol is good or bad :

- Myth: All cholesterol is bad for body
- Facts: some types of cholesterol is essential for good health
- Your body needs cholesterol to perform important job, such as making hormones and building cell
- Cholesterol travel through the blood on protein called lipoprotein

What problems can cholesterol cause :

- High cholesterol is link with high risk of cardiovascular disease
- That can include coronary heart disease, stroke, and peripheral vascular disease,

- High cholesterol is also been tied to diabetes and high blood pressure

Which food contain cholesterol ?

- Full fat dairy food such as milk, cheese, yoghurts and cream
- Animal fats such as Butter and ghee
- Fatty meat and processed meat such as sausage

OBSERVATION

According to our observation:

- The value of the calories is high in Farsan comparing with other food item 679cal are present in farsan [Per100g]
- The value of the Protein is high in Soya Stick comparing with the other food item 18.49g is present [per 100g]
- The value of Carb is high in chocos compering with the other food item 83.6g is present [per 100g]
- The value of the Total Sugar is high in Cream Roll compering with other food item 55.06g is present [per100g]
- The value of Added sugar is high in Bounce Cream compering with other food item 34.1g is present [per100g]
- The value of saturated fats is high in Farsan compering with other food items 45.8g is present [100g]
- The value unsaturated fats is high in choumin noodles compering with other foods items 19.2g present in [per 100g]
- The value of trans fats is high in Maggi and Chataka Pataka compering with other food items 0.13g and 1g respectively present [per100g]
- The value of Cholesterol is high in cream roll compering with other food items 1g is present [per100g]
- The value of sodium is high in Wheels compering with other food items 1423mg is present [per100g]

- The value of Iron is high in Maggi compering with other food items 3.7g is present [per100g]

Result

According to our observation the food items containing is high of protein is food for nutrition farsan and soya stick containing high amount of protein compering to other food item

Advantages of protein

- Protein increase Muscles Mass and Strength
- Protein in help maintain weight loss
- Protein in help maintain weight loss

Maggi and soya stick containing the high value of Trans fats

- Trans fats are not good for health it may increase your risk of heart disease . people consuming trans fats instead other or carbs *experienced a significant increase* in LDL (Bad) cholesterol without a corresponding rise in HDL (good) cholesterol

References:

- www.eatright.org
- http://www.chosemyplate.gov
- http://www.nutritional.gov
- www.cspinet.org

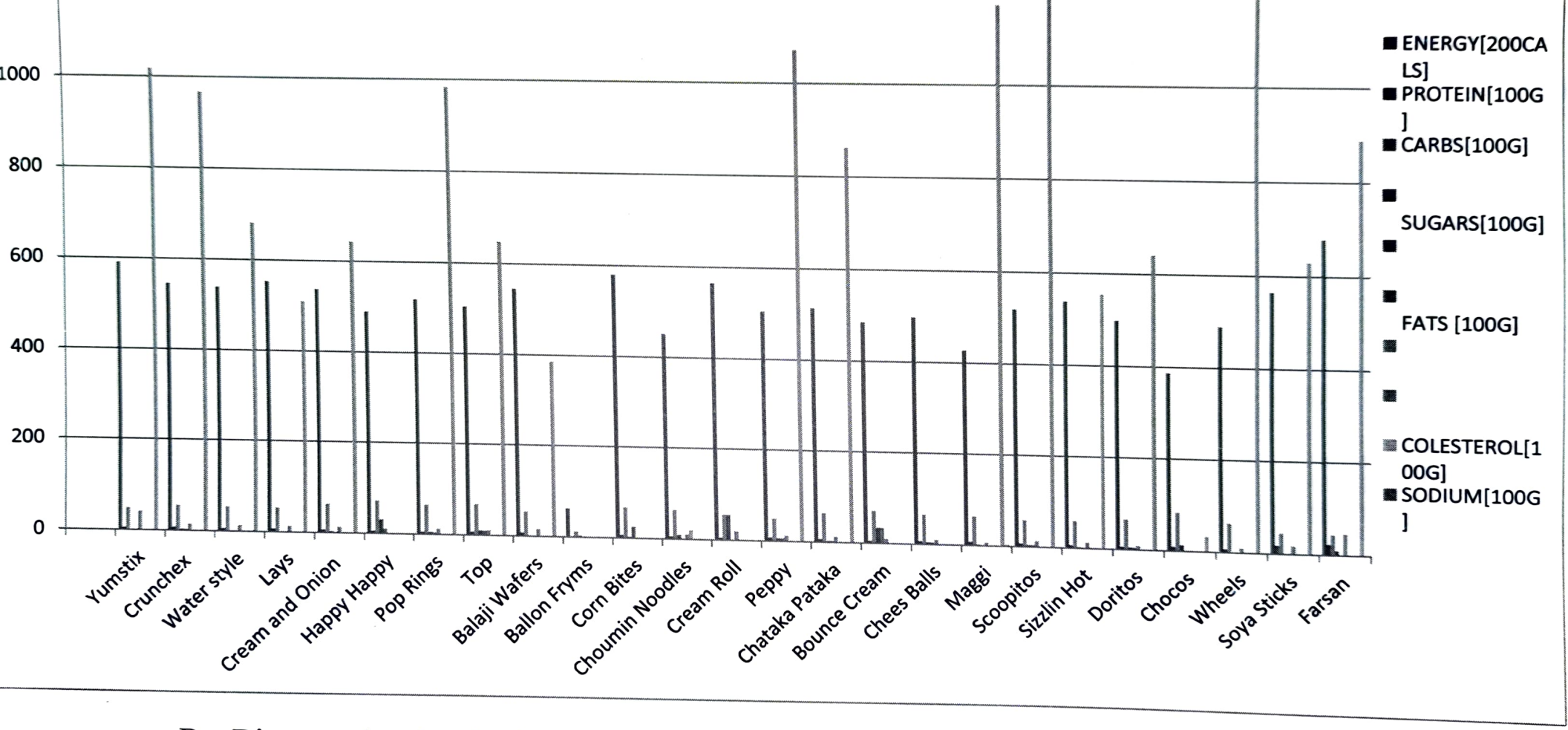
1000
800
600
400
200
0
Yumstix
Crunchex
Water style
Lays
Cream and Onion
Happy Happy
Pop Rings
Top
Balaji Wafers
Ballon Fryms
Corn Bites
Choumin Noodles
Cream Roll
Peppy
Chataka Pataka
Bounce Cream
Chees Balls
Maggi
Scoopitos
Sizzlin Hot
Doritos
Chocos
Wheels
Soya Sticks
Farsan
ENERGY[200CALS]
PROTEIN[100G]
CARBS[100G]
SUGARS[100G]
FATS [100G]
COLESTEROL[100G]
SODIUM[100G]

Table showing food constituents of 25 fast food items and their values.

Product Name	ENERGY [200CALS]	PROTEIN [100G]	CARBS [100G]	SUGARS [100G]		FATS [100G]			COLES TEROL [100G]	SODIUM [100G]	IRON [100G]
				TOTAL	ADDED	SATURATED	UN SATURATED	TRANS			
Yumstix	591	5	48.3	2	1	41.1	0	0.1	0	1018	0
Crunchex	545	7.5	55	3.8	3	14.4	0	0.1	0	967	0
Water style	539	6.5	53.2	1.3	0.6	13.3	0	0.1	0	681	0
Lays	553	6.7	52.6	0.6	0	13.2	0	0.1	0	510	0
Cream and Onion	537	6.7	63	3.4	2	12.5	0	0.1	0	643	0
Happy Happy	489	5.8	71.3	30.4	10.6	0	0	0	0	0	0
Pop Rings	518	5.4	63.7	5	4	12	0	0.1	0	983	0
Top	504	7.4	67.3	10.49	10	10.8	0	0	0.5	648	0
Balaji Wafers	545	7.7	53.4	0.49	0	15.7	0	0.1	0	386	0
Ballon Fryms	62	1.4	12	2.8	0	0	0	0	0	0	0
Corn Bites	580	7	67	2.9	25	0	0	0	0	0	0
Choumin Noodles	451.4	6.1	63.45	9.3	0	10.2	19.2	0	0	0	0
Cream Roll	565	5.1	55.05	55.06	0	19.52	0.01	0	1	0	0
Peppy	505.2	8	49.2	6.2	6.2	12	0	0	0	1071	0
Chataka Pataka	514	7	63.3	2.9	2.9	12	0.1	1	0	863	0
Bounce Cream	485	5.5	70.8	34.1	34.1	9.7	0	0	0	0	0
Chees Balls	497.5	7	64.6	4.5	4.5	10.3	0	0	0	0	0
Maggi	427	8	63.6	2.2	1.2	6.8	0.13	0.13	0	1172	3.7
Scoopitos	519	7.1	57.8	4	4	13	0.1	0.1	0	1353	0
Sizzlin Hot	538	6.6	58.9	2.3	1.2	12.5	0.1	0.1	0	555	0
Doritos	499	6.6	65.6	4.5	4.59	8.7	0.1	0.1	0	641	0
Chocos	387	9	83.6	13	0	1.2	0	0	0	33	0
Wheels	489	7.5	62.6	2	1	10	0	0.1	0	1423	0
Soya Sticks	565	18.49	45	1.35	1.35	17.71	0	0	0	630	0
Farsan	679	23.1	43.7	10	0	45.8	0	0	0	0	0

Acknowledgement

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This is to certify that following students of B.Sc. III have completed the report of the project work on **"Body Mass Index"** during the academic year 2021-2022 as partial fulfilment of the curriculum prescribed by the Shivaji University, Kolhapur.

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Teacher-in –Charge

Head, Dept. of Zoology

Examiner

Roll No -: 34 Exam Seat No - 31553

Title Of Project,

BODY MASS INDEX

DEPARTMENT OF ZOOLOGY

Submitted by,

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Under the guidance of,

Prof. Dr. R.V. Bakare

Year Of Submission,

2021 - 2022.

STATISTICAL ANALYSIS AND CLINICAL APPLICATION OF BODY MASS INDEX OF HUMAN WITH RESPECT TO DATA COLLECTED IN KVM CAMPUS.

BSC - III

DEPARTMENT OF ZOOLOGY.
KISANVEER MAHAVIDYALAYA,
WAI - 412803

INDEX

INTRODUCTION

Obesity and underweight are the most prevalent chronic medical conditions in our society in certain regions of India and world. Overweight or underweight is directly or indirectly associated with a variety of disease. The prevalence of Obesity and underweight has been studied using Body Mass Index (BMI).

The method of compulation of BMI was invented by Adolphe Quetelet between 1830 and 1850, 50. BMI is often called as Quetelet Index. It has been accepted by WHO. It shows whether the person have right weight for their height.

OBJECTIVES

i) To estimate BMI of some students and staff of Kisanveer Mahavidyalaya, Wai.
ii) To analyse the collected data statistically for distribution and corelation studies.
iii) To discuss the reasons, effects and remedies for Overweight or underweight.

METHODOLOGY

In order to study BMI of students and teachers ; for measurements of height we fixed the tap meter scale against the wall of our laboratory with centimeter fractions.

Readings of height were taken in centimeter and then converted to meter for body weight we kept mechanical weighing machine routinely used in health check-ups in Laboratory and took the weight of every individual on it. The weights were recorded in kg's rounded off to nearest values.

We have maintained the registor for records in which name, sex, age, height and weight of every volunteer with his / her signature.

The BMI from height and weight was calculated by using following formula ;

$$BMI = \frac{\text{Mass (kg)}}{\text{Height } (m^2)}$$

RESULTS

i) Distribution of individuals according to height was found in normal curve.

ii) Distribution of individuals according to weight was found inclinding towards lower side as the number of students in data collection is more and as they are in the age of 19-20 they tend to remain at normal or lower weight limits staff members are the age of above forty five at which age the weight tends to remain above the normal.

iii) The karl persons Corelation Coefficient for the height and weight is 0.619 which can be interpreted as positive Corelation towards higher range.

iv) Mean weight is 52.09 and the median is 49.00.

v) Mean height for Collection of data is 163.20 cm (1.632 mtr) and the median is 164.00 cm (1.64) mtr.

Category	BMI Range
Seriously underweight	Less than 16.49
Underweight	between 16.5 and 18.49
Normal	between 185and 248.99
over weight	between 25 and 29.99
obese	30 or more

Sr. No.	Age	Sex	Height	weight	BMI	Status
1.	29	f	1.55	56	23.33	Normal
2.	20	f	1.52	40	17.31	Underweight
3.	22	M	1.62	55	20.99	Normal
4.	21	f	1.05	57	25.33	Overweight
5.	27	M	1.65	59	21.69	Normal
6.	27	M	1.07	62	21.44	Normal
7.	20	f	1.45	37	17.61	Underweight
8.	34	f	1.57	65	26.42	Overweight
9.	57	M	1.72	67	22.71	Normal
10.	20	f	1.57	72	29.26	Overweight
11.	20	F	1.47	37	17.12	underweight
12.	20	f	1.62	45	17.17	underweight
13.	57	M	1.57	75	30.48	Obese
14.	20	F	1.52	36	15.58	Underweight
15.	22	M	1.65	56	20.58	Normal
16.	22	M	1.75	63	20.58	Normal
17.	52	M	1.67	73	26.25	Overweight
18.	47	M	1.67	67	24.10	Underweight
19.	55	M	1.65	67	24.63	Overweight
20.	24	M	1.06	50	19.53	Normal
21.	17	M	1.47	60	27.77	Overweight
22.	20	F	1.35	40	21.97	Normal
23.	20	F	1.70	52	17.99	Underweight
24.	21	F	1.42	50	24.87	Overweight
25	20	M	1.672	74	25.08	Overweight
26.	18	F	1.67	40	14.38	Seriously Underweight
27.	19	F	1.58	47	18.87	Normal.

Sr. No.	Age	Sex	Height	Weight	BMI	Status
28.	21	F	1.65	44	16.17	Underweight
29.	20	M	1.71	53	18.15	Normal
30.	20	M	1.72	55	18.64	Normal
31.	49	M	1.72	67	22.71	Normal
32.	51	M	1.66	63	22.90	Normal
33.	23	F	1.56	49	19.91	Normal
34.	48	M	1.71	68	23.80	Normal
35.	48	M	1.75	52	17.50	Normal
36.	37	M	1.71	59	22.20	Normal
37.	28	M	1.78	72	22.78	Normal
38.	18	F	1.69	43	15.08	S. Underweight
39.	19	F	1.58	47	16.54	Underweight
40.	30	F	1.51	44	19.29	Normal
41.	20	F	1.61	53	20.46	Normal
42.	20	F	1.68	49	17.37	Underweight
43.	48	M	1.69	64	22.45	Normal
44.	21	F	1.64	50	18.65	Normal
45.	19	F	1.55	45	18.75	Normal
46.	20	F	1.63	52	19.62	Normal
47.	20	F	1.48	40	18.26	Underweight
48.	19	F	1.53	37	15.81	S. Underweight
49.	56	M	1.69	64	22.45	Normal
50.	52	M	1.83	77	23.05	Normal

Total = 50 ; Normal = 27 ; Underweight = 11

Overweight = 8 ; Obese = 1 ; Seriously Underweight = 3

Study of BMI is very simple and easy was to understand the health status of the individuals with respect to the weight. In many disorders like arthritis, back pain, cardiac anomalies, etc. mostly the patients is suggested to reduce that weight if it is more than suggested average value. If is an indirect indication of increased level of cholestrol in blood which can be confirmed in clinical laboratory.

Increase in weight in normal range during childhood is an indication of normal growth while after the age of 25 years. it should remain stable proportionately according to the values given in the table and in the diagram.

From our findings, we have found that 54% students are normal ; 22% are underweight and therefore malnourished ; 16% are overweight, 6% are underweight (seriously) and 2% are abese.

CONSULTATION

Students who are normal should maintain their health. students with Underweight problems should starts exercising, keep a diet and should be health Conscious. Obese students should starts working on their health plain as the Obesity leads to many health problems. They should practice yoga, swimming, walking, etc.

CAUSES OF OBESITY

1] **Gender :-** Women tend to be more Overweight than the man. Men have a higher resting metabolic rate than women, so men requires more calories to maintain their body weight. Additionally, when women become postmenopausal, their metabolic rate decreases.

2] **Age :-** Middle-aged people tends to be more obese than young. As person gets older, the body's obesity to metabolize food shows down and do not requires as many Calories to maintain weight. This is why people note that they eat the same and do same all activities as they did when they 20 years old but at age 40, gain weight.

3] **Older Mothers :-** There is evidences that older a women gives birth, higher are the child risk of obesity.

4) **Heredity :-** Some influences may goback to heredity. Obese women tend to many obese men. If there are fewar thin people around and if obesity has a genertic compound there will be still more obese people in the next generation.

5) **Illness :-** There are some illness that can cause obesity. These includes hormones problems such as hypothyroidism, depression and some rare diseases of the brain that can lead to overeating.

6) **Medicines :-** Many different drugs including contraceptive steriods hormones, diabetes drugs, some antidepressants and blood pressure drugs can cause weigh gain. Use of these drugs is an on the upswing.

7) **Environmental factors :-** Although genes are an important factor in many causes of obesity, a person's environment also plays a significant role. Environmental factors includes lifecycle behavirous such as what a person eats and how active he/she is.

8) **Psysiological Factors :-** psysiological factors also influence eating habits & obesity. Many people eat in response to negative emotions such as boredom, sadness or anger. people who have difficulty with weight managment may be facing.

EFFECTS OF OBESITY

i) Feeling tired and lacking in energy.
ii) Experience breathing problems.
iii) Develop skin irritation.
iv) Have difficultly in sleeping.
v) Snoring problems.
vi) Back and join pains that effects mobility.
vii) Impaired glucose tolerance.
viii) Type 2 diabetes.
ix) High chalestrol and triglyceride levels.
x) High blood pressure.
xi) Coronary heart diseases.
xii) Stroke
xiii) Sleep Anoea.
xiv) Fertility problems.
xv) Complications in pregnancy (diabetes during pregnancy).
preterm labour, Caesdrean section.
xvi) Gall stones.
xvii) Cancer (colon; breast and endometrial cancer)
xviii) Gout
xix) Fatty liver
xx) A Lot of sweat occurs Compared to other people.