

Systematic Review on Eat Less and Move More; Is the Chemistry of Life?

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ABSTRACT

"Dieting must be combined with exercise"

This review explain the physical activity and exercise training are play vital role for weight loss or weight maintenance. To see prevention is better than cure, the patient is carried out 60 different tests by giving one time blood sample after fasting 12-14 hours. Eat less is the probable basic advice to lose weight. Increasing your vegetable intake can help you to lose weight. In this particular discussion, we focus on weight loss from different types of exercise training programs and calorie consumes. Clinically required weight loss is unlikely to occur. Patients wishing to lose weight should participate in physical activity and caloric restriction to improve the chances of weight loss. The less you consume, the faster you lose. At the same time, it is very important to follow a healthy, well-balanced diet plan, so that you do not become ill or lose lean muscle. In ideal condition the advice of doctor, dietitian and nutritionist is must essential. The tests such as eosinohils, MCV, MCHC, RDW-SD, Total cholesterol, LDL cholesterol, Non-HDL cholesterol, TC/HDL cholesterol ratio, LDL/HDL ratio etc shows some deviations from the reference ranges as per the guidelines.

KEYWORDS: Dieting, exercise, weight, lose, caloric, loss, healthy, diet, consume, tests, physical activity, etc

OBJECTIVE:

- To discuss the healthy diet plan.
- To know the ill effects of unhealthy diet.
- To study psychological and environmental determinants of healthy diet.
- To promote the healthy diet plan.

INTRODUCTION

The above said advice in weight-reduction management is based on the first laws of thermodynamics, which is a branch of chemistry which deals with macro particles and conversion one form of energy into the other form of energy that applies systematically to internal combustion engines. It is considered that obesity is a disorder of energy imbalance. When calories -in exceed calories-out, there is an energy surplus that the body stores as fat. In 400 BC, Hippocrates says, eat less and exercise more . If you reduce your calories intake substantially then you quickly lose weight. The long term solution is easier, more effective and evidence based i.e. (EEE). A healthy weight is an important sign of good health. What you eat and how much you eat play crucial roles in maintaining a healthy weight or losing weight. Physical activity and exercise training are the another key indicators. Patients gain weight by consuming more energy or calorie than they burn, it means consuming and burning ratio are inversely proportional to on another, at the same time other factors also play a role, such as metabolism, genetic factors, hormones, the type of foods you eat, your body type, lifestyle etc. in gaining or reducing the body weight.

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The dietitians, nutritionists and other professionals agree that the top results occurs from combining a healthful, weight-reduction diet with physical activity in the long term treatment under the supervision of a trained expert. When you try to eat fewer calories than you need, your body switches into survival mode. As you continue to eat less than you need, your body starts to break down muscle to use for energy. This muscle loss causes metabolism to slow further, so you burn even lesser calories. Literature survey reveals that, to lose one pound per week, you need to reach a total calorie deficit of average 3500 calorie per week or 500 calorie per day and so on calculated for other required days. If patient want to lose weight, he should have to consume less than recommended . The less you consume, the faster you lose. At the same time, it is very important to follow a healthy, well-balanced diet plan, so that you do not become ill or lose lean muscle. In ideal condition the advice of doctor, dietitian and nutritionist is must essential.

If patient is eating less but still gaining weight, then examine the quality of your diet. If you are eating less but eating foods

that are high in calories, thus you are in hard time to reach your goal. Check your total daily needs and try to stay within a hundred calories of that target. Drinking water helps to boost your metabolism, cleanse your body of waste and acts as an appetite suppressant. Some study shows that the water weight you lose will come back quickly, but that fat loss is real.

MATERIAL AND METHODS:

Already, after fasting 12-14 hours one time blood sample given to reputed Laboratory for analysis purpose to different 60 tests through Vardhaman Clinical Laboratory, Dr. Wangikar Hospital, Laxmi Narsing Home, Tailar line, Mondha, Parli-vajinath. The laboratory persons use different modern instruments to analyse the sample as Fully Automated Bidirectional Analyser (6 Part Differential SYSMEX XN-1000), Fully Automated H.P.L.C. using Biorad Variant II Turbo, NGSP Certified, Spectrophotometer and

required laboratory manuals etc., at Thyrocare technologies Limited, D-37/3, TTC MIDC, Turbhe, Navi Mumbai.

RESULTS AND DISCUSSION:

For the present review discussion, we considered the following 60 number of tests already made by normal man of age 50 years. Initially he has no any health problem and working on a good job. His daily routine is quite regular like early morning walk about 4-5 kilometer for 50-60 minutes with physical exercise. Good breakfast at 9.00 to 9.30 a.m. and routine work up to 1.30 to 2.00 p.m. followed by lunch. Reading and writing work or to access the papers also curricular activities with some resting period. Evening round in the market to buy daily needs alternate days. Watching 1-2 hours TV and dinner at 8.00 to 8.30 p.m. After some study preparation sleep at 10-10.30 p.m. to morning 6.00 a.m. and so on. For tests one time blood sample provided to laboratory after fasting of 12-14 hours. The following tests are found checked in the reputed laboratory.

Table: 1 Different test such as leucocytes, eosinophils, lymphocytes, hemoglobin, RBC and platelets of normal man

Test Name	Value	units	Reference range
Total leucocytes count	8.78	X 10 ³ /micro L	4.0 - 10
Neutrophils	40.5	%	40- 80
Lymphocyte percentage	35.5	%	20- 40
Monocytes	2.1	%	0- 10
Eosinophils	21.4	%	0.0-6.0
Basophils	0.2	%	<2
Immature granulocytes	0.3	%	0-0.5
Neutrophils-Absolute count	3.56	X 10 ³ /micro L	2.0-7.0
Lymphocytes-Absolute count	3.12	X 10³/micro L	1.0-3.0
Monocytes-Asolute count	0.18	X 10³/micro L	0.2-1
Basophils-Absolute count	0.02	X 10 ³ /micro L	0-0.1
Eosinophils-Absolute count	1.88	X 10³/micro L	0-0.5
Immature granulocytes	0.03	X 10 ³ /micro L	0-0.3
Total RBC	5.11	X 10 ⁶ /micro L	4.5-5.5
Nucleated RBC	NIL	X 10 ³ /micro L	<0.01
Nucleated RBC %	NIL	%	<0.01
Hemoglobin	15.9	g/dL	13-17
Hematocrit PCV	44.52	%	40-50
Mean cor-volume (MCV)	103.9	fL	83-101
Mean cor-hemoglobin (MCH)	31.1	pg	27-32
Mean cor-hemo-conc. (MCHC)	29.9	g/dL	31.5-34.5
Read cell dist width (RDW-SD)	50.4	fL	39-46
(RDW-CV)	13	%	11.6-14
Mean plate let volume (MPV)	10.8	fL	6.5-12
Platelet count	258	X 10 ³ /micro L	150-400
Platelet to large cell ratio (PNCR)	31.3	%	19.7-42.4
Plateletcit (PCT)	0.28	%	0.19-0.39

Table:2 Different test such as HbA1c,Average blood glucose (ABG), Iron, Total iron binding capacity (TIBC), Percentage of transferrinsaturation, Calcium, Uricacid, Alkaline Phosphate, Bilirubin etc. of normal man.

Test Name	Technology	Value	Units, Normal range
HbA1c	HPLC	5.4	%, (5-7) Normal
Average blood glucose (ABG)	Calculated	108	Mg/dl, (90-120) Good
Iron	Photometry	137.5	Microgram/dl, Male 65-175, Female 50-170
Total iron binding capacity(TIBC)	Photometry	353	Microgram/dl, Male 225-535, Female 215-535
% of transferrin saturation	Calculated	38.95	%, (13- 45)
Blood Urea Nitrogen BUN	Photometry	10.34	mg/dl, (7- 25)
Creatinine -serum	Photometry	0.91	mg/dl,(0.6- 1.1)

BUN/SR.Creatinine Ratio	Calculated	11.36	Ratio, (9.1- 23.1)
Calcium	Photometry	9.08	mg/dl, (8.8- 10.6)
Uric acid	Photometry	6.00	mg/dl, (4.2- 7.3)
EST. Glomerular Filtration Rate (eGFR)	Calculated	97	ml/min/1.73 m ²
Total Triiodothyronine T3	C.L.I.A.	100	ng/dl, (60- 200)
Total thyroxine T4	C.L.I.A	8.6	microgram/dl, (4.5- 12)
Thyroid Stimulating Har.TSH	C.L.I.A	2.27	microIU/ml, (0.3- 5.5)
Alkaline Phosphate	Photometry	98.8	U/l,(45- 129)
Bilirubin-Total	Photometry	1.26	Mg/dl,(0.3- 1.2)
Bilirubin-Direct	Photometry	0.32	Mg/dl,<0.3)
Bilirubin-indirect	Calculated	0.94	Mg/dl,(0- 0.9)
Gamma Glutamyl trans.GGT	Photometry	34.6	U/l, <55
Aspartate Aminotrans.SGOT	Photometry	25.5	U/l, <35
Alanine Transaminase SGPT	Photometry	25.6	U/l, <45
Protein-total	Photometry	7.5	Gm/dl, (5.7- 8.2)
Albumin-serum	Photometry	4.4	Gm/dl, (3.2- 4.8)
Serum Alb/glob.ratio	Calculated	1.42	Ratio, (0.9- 2)
Serum globulin	Photometry	3.1	Gm/dl, 2.5- 3.4)

Table:3 Different test such as Total Cholesterol, LDL-Direct, TC/HDL Ratio, LDL/HDL ratio, Non-HDL Cholesterol of normal man

Test Name	Technology	Value	Units	Normal Range
Total Cholesterol	Photometry	224	mg/dl	125-200
HDL Cholesterol-direct	Photometry	38	mg/dl	35-80
LDL Cholesterol -direct	Photometry	164	mg/dl	85-130
Triglycerides	Photometry	133	mg/dl	25-200
TC/HDL Cholesterol Ratio	Calculated	5.9	Ratio	3-5
LDL/HDL Ratio	Calculated	4.3	Ratio	1.5-3.5
VLDL Cholesterol	Calculated	26.6	mg/dl	5-40
NON-HDL Cholesterol	Calculated	186.1	mg/dl	<160

Table:4 *Reference Ranges as per NCEP ATP III Guidelines

Total Cholesterol	mg/dl	HDL	mg/dl	LDL	mg/dl	Triglycerides	mg/dl
Desirable	< 200	Low	< 40	Optimal	< 100	Normal	< 150
Border line high	200-239	High	> 60	Near optimal	100-129	Border line high	150-199
High	> 240	-	-	Border line high	130-159	High	200-499
				High	160-189	Very high	> 500
				Very high	> 190		

*** For lipid parameters 10-12 hours fasting is mandatory, otherwise values might be fluctuate.**

The high lighter tests are advised to the patient with some medical prescription and as to eat walnuts, apples and flax seeds, continue the morning walk, prefer running, uphill, stairs, walk in break time and some interval try stand also. Eat fruits, vegetables, whole grains, beans, plant sources proteins. Drink plenty of water which keep your blood ways clean, have green tea, citrus-lemon, juice, almonds, honey, orange juice and grape fruits. Eosinophils or more commonly called acidophils are a variety of white blood cells and one of the immune system components responsible for combating multicellular parasites and certain infections in vertebrates. Tissue-dwelling helminths are parasitic infections that often produce eosinophilia. The presence of more than 500 eosinophils/microlitre of blood is called as eosinophilia and typically seen in people with a parasitic infection of the intestine, autoimmune and collagen vascular disease. Patients are advised with some medical subscription and not to eat six food diet such as milk products, eggs, wheat, soy, peanuts/tree nuts and fish for at least 3 to 6 weeks to reduce the eosinophil count and also to eat citrus fruits, Garlic, Ginger, Spinach, Almonds and Yogurt etc. The bilirubin levels may increase due to stress, strain, dehydration, fasting, infection or exposure to cold etc. The bilirubin is a yellowish

substance in blood. It forms after red blood cells break down and it travels through liver, gallbladder and digestive tract before being excreted. Typically, bilirubin levels falls between 0.3 to 1.2 miligrams per deciliter. The high level of bilirubin will be reduced by drinking 5 to 6 liter water per day to flush out toxins, moderate consumption of coffee or herbal tea for liver health, adding milk thistle in routine, eat at least 2 cups of veggies and 2 cups of fruit juice per day and prefer fibers in diets. The diabetes blood screen of the patient is 5.4% and average blood glucose is 108 mg/dl, both values are normal. The average blood glucose value is calculated from HBA1c value and it indicates average blood sugar level over past three months.

Turmeric and ginger also lowers the cholesterol level and triglycerides levels, which also reduce LDL cholesterol and boost the HDL cholesterol. Enjoy the Potato, tomato, fruit soup and juices but say no to ice cream, butter, meat and chicken. Always prefer warm water for drinking to increase metabolism. Patients diabetes screen, Average blood glucose iron, Total iron binding capacity, percentage transferrin saturation etc. tests are normal. A literature index shows that, the diet in high fiber can help to lower the cholesterol

level up to 10 percent. As we know that the high cholesterol is one of major controllable risk for coronary heart disease, heart attack and stroke. The present patient shows total Cholesterol level 224 mg/dl but the actual range is between 125-200 mg/dl. It means it is diverted by 24 mg/dl which is called as borderline high cholesterol i.e. between 200-239 mg/dl. So patient is advised to reduce the cholesterol level by some medical subscription and balanced diet with physical exercise. Same is found in LDL (Low Density Lipoprotein) cholesterol, the value is 164mg/dl and the range is in between 85-130 mg/dl. This is called LDL high level i.e. 160-189 mg/dl, followed by LDL very high level i.e. > 190 mg/dl. This is bad cholesterol exceed by 34 mg/dl, which may contributes to fatty buildups in arteries. This condition probably narrow the arteries and increases the risk for heart attack, stroke and peripheral artery disease or PAD. The patients triglycerides level and HDL (High Density Lipoprotein) are 133 mg/dl range (25-200 mg/dl) and 38 mg/dl range (35-80 mg/dl) respectively are also normal. The HDL cholesterol are good cholesterol whose higher level are considered actually better while, the triglycerides are the most common type of fat in the body. They store excess energy from your diet. Total triiodothyronine, Total thyroxine, Thyroid stimulating hormones, Blood urea nitrogen, creatinine-serum, Bun/ Sr. Ceratinie ratio, calcium and uric acid and Est. Glomerular filtration rate etc tests are quite normal . The clinical significance of normal creatinine reference interval does not necessarily reflect a normal GFR for a patient, because mild and moderate kidney injury is poorly inferred from serum creatinine alone. Thus, it is recommended for clinical laboratories to routinely estimate glomerular filtration rate (eGFR), a gold standard measurement for assessment of renal function and report the value when serum creatinine is measured for patients 18 and older,when appropriate and feasible. It cannot be measured easily in clinical practice, instead, GFR is estimated from equations using serum creatinine, age and sex. This provides easy to interpret information for the doctor and patient on the degree of renal impairment since it approximately equates to thr percentage of kidney function remaining. Application of CKD-EPI equation together with the other diagnostic tools in renal medicine will further improve the detection and management of patients with CKD. Lastly in the nut cell, the advise to patient is nothing to worry just have regular follow up and required balanced diet with regular physical exercise.

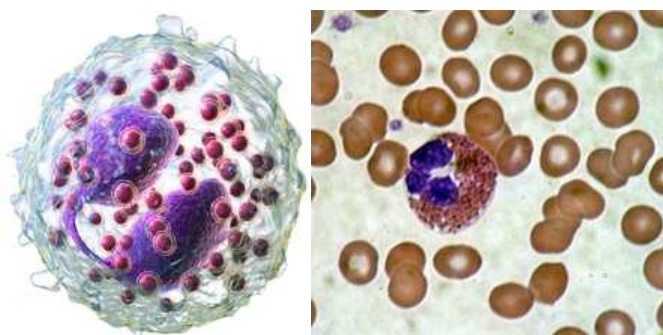


Figure: a) 3D Rendering of eosinophil b) Eosinophil Under the microscope

RESTRICTING CALORIES AND EXERCISE MORE:

Literature survey reveals number of tips for losing weight or reduction in weight management . Some important tips are as follows.

1. Eat fewer calories, as diet plays a vital role in weight maintenance.
2. Get in the pool, as swimming is a great way to burn calories.
3. Try adaptive sports, as sports will help in weight management.
4. Hit the Gymnasium.
5. Drink ample of water.
6. Breakfast never miss it.
7. Eat balanced diet.
8. Eat slowly and happily.
9. Avoid sugary drinks and fruits juice with sugar.
10. Drink water before meals.
11. Choose weight loss-friendly foods.
12. Eat soluble fibre.
13. Drink coffee or tea.
14. Base your diet on whole foods, food grains.
15. Say No to sweets.
16. Get good quality sleep.
17. Weigh your self everyday.
18. Increase vegetable intake.
19. Stay hydrated.
20. Avoid unhealthy foods.
21. Enjoy super diet.

CONCLUSION:

So far the large number of people who are concerned with their diet and make an attempt to change their diet patterns, we advise them, dieting must be combined with exercise under the supervision of doctor, dietitian and nutritionist.

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