



# **NUTRITION DIAGNOSIS AND INTERVENTION FOR OBESITY**

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# RECAP OF KNOWN CONCEPTS

- Managing your weight means balancing calories consumed with calories burned during normal activities and exercise.
- 1 lb. of body fat stores 3500 calories. So cutting 500 calories a day for 7 days should result in 1 lb. of weight loss.
- Cutting 100 calories a day from your diet, can result in a 10 lb. decrease in 1 year. Ideal Body Weight is a standard of healthy weight.
- BMI and waist circumference within range are good markers of healthy weight status.



# FACTORS INFLUENCING WEIGHT

<b>Energy intake</b>	<b>RMR</b>
<b>Age</b>	<b>Physical activity expenditure</b>
<b>Gender</b>	<b>Thermic effect of food</b>
<b>Diet composition</b>	<b>NEAT</b>
<b>Sensitivity to hunger and satiety hormones</b>	<b>Energy efficiency</b>
<b>Response to food cues</b>	<b>Sleep</b>
<b>Overestimating physical activity energy expenditure</b>	<b>Stress and Hormones</b>
<b>More sitting, less moving</b>	<b>Many prescription medications</b>
	<b>Genetics</b>



# CASE:

# MRS. WASEEM

Age : 45 married – 3 kids  
Height 5 ft. 4 inches  
Weight 90 kg  
Body Fat : 42%  
BMI : 34

## Health History:

- Bone pain. Degenerative changes in L5-S1. Osteoarthritis in both knees. Sciatic pain right leg. Exhaustion
- Craves sugar
- Thalassemia minor

- Full time student (8-2pm)
- Upper income group
- 3 college going kids
- Home maker
- Exercise: sporadic, though tries very hard

## Family Health History

- Both parents hypertensive and overweight
- Mother diabetic
- All siblings overweight

## Weight history

- Gain and loss cycle since teenage.
- Used to lose easily, now steady gain despite efforts.
- Had tried almost every diet.

## Medicines:

Voltral 50 as needed  
Nuberol Forte 2/day  
Calcite 600 mg 2/day  
Muscoril 4mg 2/day (muscle spasm)



MRS. WASEEM	DIETARY RECALL
Different choices for breakfast	2 slices bread with butter and honey. One fruit. Or 1 dawn paratha with tea and milk
10-11am:	2 wheat slices or Marie biscuits Or 3 dates
2pm:	1 roti /2 bread slices/1 cup rice Salun with meat / 1 egg white tea
5 pm	1-2 fruit or a bowl of chick peas
9-10 pm	1 roti some baked starter like kabab Korma or similar salun  OR pulao or biryani 1 cup Raw salad with raita  Or Baked meat with vegs and 1-2 slices bread Green tea and biscuit/dark choc.
Post dinner on most days	



# WOULD YOU WANT TO INVESTIGATE FURTHER?

Fasting insulin 40 uU/ml

Lipids

total chol 174 mg/dl

triglycerides 214 mg/dl

HDL 41mg/dl

LDL 110mg/dl

VLDL 43mg/dl

HbA1c 6.2 %

Serum uric acid – normal



# STEPS FOLLOWED

- Refer to an Endocrinologist. Check prescription to decide what comes next.
- Discuss diet in detail. Arrive at a mutually agreed mode of action.
- Suggest supplements
- Exercise – not just for weight loss
- Managing sugar cravings



# CASE:

# SHEHLA BANO

Age : 27 single Height 5 ft 3 inches Weight 81 kg BMI : 31.5	Weight history Weight gain since 14 yrs old. Can not reduce below 75kg
<ul style="list-style-type: none"><li>• Hospital admin work, 12 hr shifts</li><li>• lower middle income</li><li>• Eldest of 3 sisters</li><li>• Exercise: none</li></ul>	Health History: Period was irregular Hypo thyroid Now on Glucophage 1000mg and Eltroxin 25mcg. Both issues corrected.
Weight gain since 7 years Extreme tiredness, bone pain	Family Health History Both parents hypertensive and overweight Mother diabetic One sister suspected PCO





SHEHLA BANO	DIETARY RECALL
7am:	2 rusks plain tea + 2 heaped tsp Everyday
10-11am:	1 paratha and tea
2pm:	1 roti from home Dal or subzi (home cooked) Tea (as above)  On Tuesday and Friday, ate Biryani or dal chawal at work Tea
2-8pm	Eats nothing but takes 4-5 cups of tea (as above)
9pm	Roti 1-1.5 Dal or subzi mostly Thursday and Sunday chicken or meat



## STEPS

- Reason for bone pain, test for Vitamin D
- Check CBC
- Calorie reduced diet plan
- Incorporating exercise in an already hectic day
- Suggest needed supplements
- Follow up, support and trouble shoot
- Celebrate



## BACKGROUND

- The effectiveness of low-fat diets for long-term weight loss has been debated for decades, with many RCTs and recent reviews are giving mixed results. Aim was to summarize the large body of evidence from RCTs to determine whether low-fat diets contribute to greater weight loss than participants' usual diet, low-carbohydrate diets, and other higher-fat dietary interventions.
- **CONCLUSION** the long-term effect of low-fat diet intervention on bodyweight depends on the intensity of the intervention in the comparison group. **When compared with dietary interventions of similar intensity, evidence from RCTs does not support low-fat diets over other dietary interventions for long-term weight loss.**
- **Effect of low-fat diet interventions versus other diet interventions on long-term weight change in adults: a systematic review and meta-analysis.** Deirdre K Tobias, et al. The Lancet Diabetes and Endocrinology 2015 Dec;3(12):968-79.



## BACKGROUND

- Dietary modification remains key to successful weight loss. Yet, no one dietary strategy is consistently superior to others for the general population. Previous research suggests genotype or insulin-glucose dynamics may modify the effects of diets.

## CONCLUSION

- In this 12-month weight loss diet study, **there was no significant difference in weight change between a healthy low-fat diet vs a healthy low-carbohydrate diet, and neither genotype pattern nor baseline insulin secretion was associated with the dietary effects on weight loss.** In the context of these 2 common weight loss diet approaches, neither of the 2 hypothesized predisposing factors was helpful in identifying which diet was better for whom.
- [JAMA](#). 2018 Feb 20;319(7):667-679. doi: 10.1001/jama.2018.0245.  
**Effect of Low-Fat vs Low-Carbohydrate Diet on 12-Month Weight Loss in Overweight Adults and the Association With Genotype Pattern or Insulin Secretion: The DIETFITS Randomized Clinical Trial.**  
[Gardner CD](#)<sup>1</sup>, [Trepanowski JF](#)<sup>1</sup>, [Del Gobbo LC](#)<sup>1</sup>, [Hauser ME](#)<sup>1</sup>, [Rigdon J](#)<sup>2</sup>, [Ioannidis JPA](#)<sup>1,3,4,5</sup>, [Desai M](#)<sup>2,3,4,5</sup>, [King AC](#)<sup>1,3</sup>.



# DOES ANY DIET REALLY WORK FOR WEIGHT LOSS?

- **All reduced calorie diets work** if you stick to them.
- **Most ultimately fail** if they don't lead to real change in habits.
- The Best Diet is the One You'll Follow Feb 26<sup>th</sup> 2009 N Engl J Med  
800 volunteers were assigned to one of four pre-specified diets that were loosely based on popular diets: low fat, average protein; low fat, high protein; high fat, average protein; high fat, high protein.  
**At 2 years, the amount of weight lost was similar across the four plans, on the order of 7 to 9 pounds. Feelings of hunger, satiety, and of satisfaction with the diet were the same across the board. So were cholesterol levels and other markers of cardiovascular risk.**



# WEIGHT CONTROL REGISTRY FINDINGS

- Since 1994, the National Weight Control Registry in USA has been collecting data on individuals who have lost substantial weight and kept it off for more than 5.5 years
- 78% ate breakfast daily
- 75% weighed themselves at least once/week
- 62% had less than 10 hours of screen time/week
- 90% exercised for 1 hour everyday



# HEALTH BENEFITS OF EXERCISE

## Lowered Disease Risk

Cardiovascular disease

Colon cancer

Type 2 diabetes

Obesity

## Cardiovascular Effects

Lowers blood pressure

Improves blood pumping

Improves VO<sub>2</sub> max

Increases high-density lipoprotein cholesterol

## Bone Health

Increases bone mass

Increases strength and balance

Reduces risk of falls and bone fractures

## Overall Improvements

Increases blood flow

Strengthens immune function

Normalizes blood sugar

Reduces overall mortality

## Mental Health

Decreases symptoms of depression and anxiety

Improves sleep

Enhances relaxation

Increases psychological well-being

# CASE:

# SHAHID NISAR

Age : 57

Married, grown up kids

Height 5 ft 10 inches

Weight 110 kg

BMI : 34.7

## Family Health History

- Father, CVD.
- Mother, diabetic.
- All 3 brothers overweight

- Semi retired businessman who has been consulting you sporadically for a year or so.
- High income
- Very social

## Health History:

- Hypertensive
- Elevated uric acid
- Serum insulin 19uU/ml

Previously no exercise. Now

- Exercises 5 days/wk in a gym with a trainer.
- Also part of a cycling group (Saturday or Sunday)

## Medicines

- Exforge 160/12.5 since 5 years
- Mega men
- Gouric 40mg
- Saw palmetto for prostate





SHAHID NISAR	DIETARY RECALL
9.30 – 9.45am (post exercise at the exercise club)	2 brown toasts 2 eggs fried 1 cup tea (no sugar) Greeno veg juice 5times/wk
2pm: At work, food is sent from home.	Salad: cucumber, beetroot, carrot 1 chapati with Chicken salun/dal etc (nap for 1-2 hours)
6-7 pm. Out with friends 3 times/week	Special chai (urban dera) Pakorey or fries. Sometimes chat.
8-9 pm. Out with friends 3 times/week When at home	Steak mostly with vegetables  1 chapati with any meat salun
11-12 a.m.	Warm milk 1 cup

## NOTES

- Family insists he should be put on a frugal and restrictive plan
- So far, **no real success in terms of weight loss**

### **That which you were able to change:**

- Started exercising
- Depression has vanished.
- Quit alcohol
- Reduced smoking to 1-2 cigarettes/ week
- Tries to understand when family is not around

**What comes next?**



# OBESITY PREVENTION AND MAINTAINING WEIGHT LOSS

## WHAT NEEDS TO BE DONE?

- dietary guidelines 2015-2020: Emphasize eating patterns, not a prescribed intake of protein, carbohydrate and fat
- Several position papers from Academy of Nutrition and Dietetics also herald dietary patterns for good health
- You can't simply give people what to do, you have to help them do it. Provide weight loss maintenance support
- **Join in the efforts to prevent obesity**



# IMPORTANT LINKS AND RESOURCES

- Harvard T.C. Chen School of Public Health  
([www.hsph.harvard.edu/obesity-prevention-source](http://www.hsph.harvard.edu/obesity-prevention-source))

- National Weight Control Registry ([www.nwcr.ws](http://www.nwcr.ws))

*Research findings and tips from those who have successfully maintained weight loss.*

- Obesity Action Coalition ([www.obesityaction.org/wp-content/uploads/prescription\\_medications.pdf](http://www.obesityaction.org/wp-content/uploads/prescription_medications.pdf))

*Fact sheet on prescription medications and weight gain*

- *Diabetes Self Management: Do You Know Your Insulin Level?*

[David Spero, BSN, RN](#) (updated Nov 2017)

<https://www.diabetesselfmanagement.com/blog/do-you-know-your-insulin-level/>

