

## Nutrition Informatics Assignment: 2

### Case study

A 50-year-old male working as an executive with limited sleep and altered food patterns. He was recently diagnosed with pre-hypertensive. His height is 5 ft 10 inches and weighs 95 kg. He has a strong family history of heart disease. He is a non-vegetarian, smokes one pack of cigarettes a day and has the habit of having additional salt in his meals. He wants to follow the lifestyle and dietary measures that would help him reduce weight and also manage the blood pressure levels. He has a follow-up in 6 months.

### SMAART Nutrition Informatics Template

- **What is Hypertension?**

Blood pressure is the force exerted by circulating blood against the walls of the body's arteries, the major blood vessels in the body. Hypertension is when blood pressure is too high.

Blood pressure is written as two numbers. The first (systolic) number represents the pressure in blood vessels when the heart contracts or beats. The second (diastolic) number represents the pressure in the vessels when the heart rests between beats.

Hypertension is diagnosed if, when it is measured on two different days, the systolic blood pressure readings on both days is  $\geq 140$  mmHg and/or the diastolic blood pressure readings on both days is  $\geq 90$  mmHg.

- **Discuss the causes and consequences of hypertension**

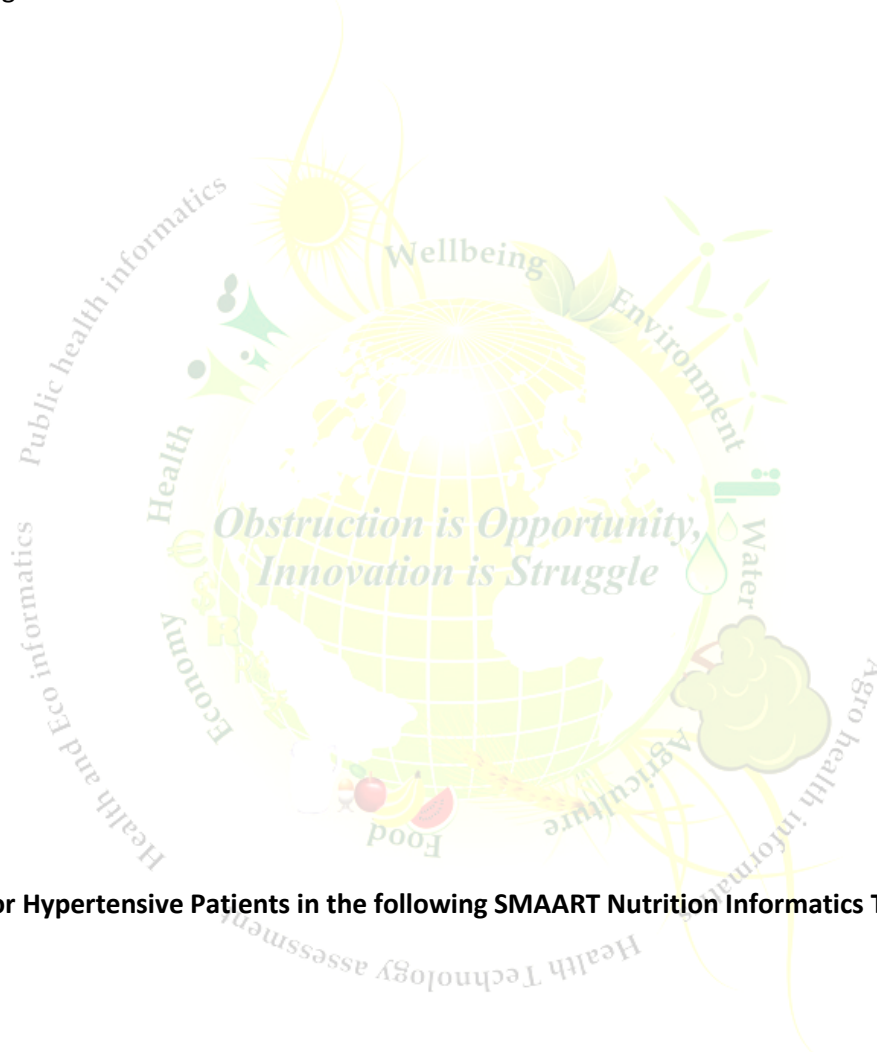
Causes of hypertension-

1. Stress
2. Obesity
3. Smoking and tobacco consumption
4. Excessive alcohol consumption
5. Excessive salt
6. Unhealthy dietary habits
7. Physical inactivity
8. Age
9. Comorbid condition

Hypertension is called a "silent killer". Symptoms include early morning headaches, nosebleeds, irregular heart rhythms, vision changes, and buzzing in the ears. Severe hypertension can cause fatigue, nausea, vomiting, confusion, anxiety, chest pain, and muscle tremors.

Among other complications, hypertension can cause serious damage to the heart. Excessive pressure can harden arteries, decreasing the flow of blood and oxygen to the heart. This elevated pressure and reduced blood flow can cause:

- Chest pain, also called angina.
- Heart attack, which occurs when the blood supply to the heart is blocked and heart muscle cells die from lack of oxygen. The longer the blood flow is blocked, the greater the damage to the heart.
- Heart failure, which occurs when the heart cannot pump enough blood and oxygen to other vital body organs.
- Irregular heart beat which can lead to a sudden death.



**Diet Plan for Hypertensive Patients in the following SMAART Nutrition Informatics Template**

Day	Meal	Usual eating time	Foods you normally eat	Portion size you eat	Ideal Eating timing	Foods you should eat	Portion size you should eat	Foods you should avoid	Comments
Monday	Breakfast	9:00 AM	Cornflakes	One cup	8:00 AM	Raagi dosa	60 grams	Fried foods.	Trying having breakfast a little early.
						Sambhar	1 small		



							bowl (30 grams)		
Mid meal	N/A	Does not consume anything	N/A	11:00 AM	Fruit bowl.	100 grams	Fried foods.	Do not skip your mid day meal.	
Lunch	2:00 PM	Roti	2 rois	1:00 PM	Vegetable salad	100 grams	Processed foods.	Reduce the intake of salt. You can make the food without salt and keep a small sachet of salt to add it in the food so that you can have a control of it.	
		Chicken curry	1 bowl		Phulka	2			
					Rice	1 small bowl (30 grams)			
					Spinach dal	1 small bowl (30 grams)			
					Rajma curry	1 small bowl (30 grams)			
					Curd	1 small bowl (30 grams)			
Evening	5:00 PM	Aloo flitters	5-6no.	4:00 PM	Poha	1 small bowl (30 grams)	Fried foods.		
Late evening	N/A	Nothing	N/A	6:00 PM	Tea	1 cup (75ml)		Avoid eating fried food as it increases cholesterol	
Dinner	9:30 PM	Rice	2 bowls	8:00 PM	Phulka	2			
		Dal	1 bowl		Khichdi	1 small bowl (30 grams)			
					Veg raita	1 small bowl (30 grams)			
					Chicken curry	1 small bowl (50 grams)			



	After dinner	N/A	Nothing	N/A	10:00 AM	Milk	1 cup (75ml)	Heavy and fried foods.	Milk induces sleep.
Tuesday	Breakfast	9:00 AM	Vada	2 no.	8:00 AM	Semolina	2 cups (60 grams)	Fried foods.	Trying having breakfast a little early.
	Mid meal	N/A	Nothing	N/A	11:00 AM	Sago kheer	1 small bowl (30 grams)		Do not skip your mid day meal.
	Lunch	2:00 PM	Roti	2	1:00 PM	Phulka	2		
			Brinjal curry	1 small bowl (30 grams)		Rice	1 small bowl (30 grams)		
						Amarant h dal	1 small bowl (30 grams)		
						Capsicum curry	1 small bowl (30 grams)		
						Buttermilk	1 cup (75ml)		
	Evening	5:00 PM	Aloo toast	1-2no	4:00 PM	Porridge	1 small bowl (30 grams)	Fried foods.	Avoid eating fried food as it increases cholesterol
	Late evening	N/A	Nothing	N/A	6:00 PM	Banana and fig smoothie	1 cup (75ml)		
	Dinner	9:30	Rice	1 small bowl (30 grams)	8:00 PM	Soup	1 small bowl (30 grams)		
			Chicken curry	1 small bowl (50 grams)		Phulka	2		
						Rice	1 small		



							bowl (30 grams)		
						Chicken curry	1 small bowl (50 grams)		
	After dinner	N/A	Nothing	N/A	10:00 PM	Milk	1 cup (75ml)	Milk induces sleep	
						Almonds	5 grams		
Wednesday	Breakfast	9:00 AM	Puri	4 no	8:00 AM	Mixed Vegetable Dhalia	1 bowl (30gms)	Fried foods, pickles, refined foods	Avoid eating deep fried foods and pickles to prevent hypertension and cardiac problems.
			Aloo curry	1 bowl		Apple	1 no.		
	Mid meal	10:00	Tea with sugar	1 cup	11:00 AM	Green Tea	1 cup (100ml)	Processed foods	Avoid white sugar
	Lunch	2:00 PM	Fried Rice	2 cups (60 grams)	1:00 PM	Veg Salad (Cucumber, Carrot, Beetroot)	1 bowl	Avoid red meat and sweets	Try to include vegetable salad and prefer lean meat (Fish, Chicken) over red meat (mutton).
			Mutton Curry	1 cup		Phulka	2 no. (40gms)		
			Gulab-Jamun	2 no.		Rice Steamed Fish	1 cup (30 grams)		
						Ridgegourd curry	1 no.(50 grams)		
							1 cup (100 grams)		
	Evening	5:00 PM	Samosa	1 no	4:00 PM	Sprouts Chaat seasoned with lemon juice	1 bowl (30gms)	Avoid junk foods	Use lemon juice instead of salt for seasoning.



			Coffee	1 cup				
Late evening	N/A	N/A	N/A	6:00 PM	Mint Buttermilk	1 glass (100ml)	Avoid use of full fat milk/curd.	Instead of whole milk, use toned/skimmed milk
Dinner	9:00	Butter Naan	2 no	8:00 PM	Tomato Soup	1 bowl	Avoid heavy meals (having more butter or oil)	Try to eat light meals with less fats
		Palak paneer	1 cup		Phulka	2 no. (40gms)		
					Chicken curry	1 cup (50gms)		
After dinner	10:30 PM	Coffee	1 cup	9:00 PM	Skim Milk	1 cup	Avoid taking caffeinated beverages as it disturbs the quality of sleep. Milk induces sleep.	
Thursday	Breakfast	9:00 AM	Lemon Rice	1 bowl	8:00 AM	Idli	4 no. (60 gms)	Try to incorporate meals with cereal and pulse combination for adequate protein and fibre.
						Sambar	1 cup	
Mid meal	10:00 AM	Tea with biscuits	1 cup ; 2 no	11:00 AM	Green Tea	1 cup	Avoid processed foods	Instead choose nuts over processed foods
						Walnuts, Almonds	5 each	
Lunch	2:00 PM	Mutton Biryani	2 cups (60 gms)	1:00 PM	Vegetable salad (Carrot, Cucumbe	1 bowl	Avoid red meat and recipes with excess	Try to include vegetable salad and prefer lean meat (Fish,



						r, Beetrrot)		oil	Chicken) over red meat (mutton)
			Mirchi ka salan	1 cup		Phulka	2 no (40gms)		
						Rice	1 bowl (30gms)		
						Tomato Dal	1 cup (30gms)		
						Chicken Curry	1 cup (50gms)		
						Skim Curd	1 cup (50gms)		
Evening	5:00 PM		Vegetable puff with ketchup	1 no	4:00 PM	Fruit bowl (Apple, pomegra nate, papaya)	1 bowl (100gm s)	Avoid bakery products	Try to eat one whole fruit in a day
Late evening	N/A	N/A	N/A	6:00 PM	Puffed rice Chaat	1 bowl (30gms)			
Dinner	9:30 PM		Chapathi	2 no (60 gms)	8:00 PM	Jowar Roti	2 no (60 gms)	Avoid deep fried vegetables	Include millet based preparations
			Ladies Finger Fry	1 cup ( 100 gms)		Mixed Vegetabl e Curry	1 cup (100gm s)		
						Cucumbe r Raitha	1 cup (100gm s)		
After dinner	10:30 PM	Watermelon juice with sugar		9:00 PM	Waterme lon	1 bowl (100gms)	Avoid fruit juices	Eat whole fruit to prevent loss of fibre	
Friday	Breakfast	10:00 AM	Aaloo parantha	2 no. (60g)	8:00 AM	Oats Upma	1 1/2 cup (45gms)	Avoid Butter	Maintain meal timings
						Sambhar	1 cup (30gms)		
						Barley Water	1 glass (30gms)		
						Boiled Egg white	1 no (50gms)		



	Mid meal	N/A	Nothing	N/A	11:00 AM	Ragi Malt	1 glass (30gms)	Avoid Cheese	A mid meal healthy snack prevents over eating during large meals
						Boiled Corn chat	1 cup (50gms)		
	Lunch	2:00 PM	Rice	2 cups (60gms)		Phulka	2 no (40gms)	Avoid papads & pickles	High fibre to be consumed for satiety
			Any curry	2 cups (200gms)		Brown rice	1 cup (30gms)		
			Curd	1 cup (50gms)		Ridge gourd curry	1 cup (100gms)		
			Pickle			Steamed Chicken	1/2 cup (25gms)		
						Curd	1 cup (50gms)		
	Evening	N/A	Nothing	N/A	4:00 PM	Sprouts	1 cup (30gms)	Avoid fried foods	Squeezing lemon to sprouts increases bioavailability of Iron
						Pineapple Cucumber Salad	1 cup (100gms)		
	Late Evening 6:30 PM	Samosa	2 no	6:00 PM	Green Tea	1 glass (100ml)	Avoid processed foods		
	Dinner	9:00 PM	Rice	2 cups (60gms)	8:00 PM	Phulka	1 no (20gms)	Avoid fried foods	Maintain a portion size. Avoid over eating
			Fried Chicken	1 cup (100gms)		Vegetable Rice	1 cup (30gms)		
			Dal	1 cup (30gms)		Amarant h dal	1 cup (30gms)		





						Tomato Raita	1 cup (50gms)		
	After Dinner 10:30 PM	Gajar Halwa	1 cup (100gms)	9:00 PM	Turmeric milk	1 glass (100ml)	Avoid juices	Try to include 2 portion of whole fruits in a day	
Saturday	Breakfast	10:00 AM	chapati	2 (60 gms)	10:00 AM	upma	1 cup (30 gms)	avoid processed foods	try to eat meals at the same time everyday
			veg curry	1 cup (100 gms)					
	Mid meal	11:00 AM	samosa	2	11:00 AM	sprouts	1 cup (30 gms)	avoid fried foods	it would be better to include a fruit
	Lunch	2:00 PM	rice	1 cup (30 gms)	12:30 PM	veg pulao	1 cup (30 gms)	avoid excess seasoning foods	just do not over eat
			dal	2 cup (30 gms)		dal	2 cup (30 gms)		
			veg curry	1 cup (100 gms)		veg raita	1 cup (100 gms)		
			curd	2 cup (100 gms)					
	Evening	3:00 PM	puri	4 in number	4:00 PM	watermelon with some soaked almonds	100 gms	avoid oily foods	maintain correct portion sizes
	Late evening N/A	orange	1 cup(100 gms)	6:00 PM	sprouts salad	1 bowl (30 gms)	avoid excss salty foods	avoid heavy meals	
	Dinner	N/A	rice	1 cup (30 gms)	8:00 PM	phulka	2 in no (40 gms)	avoid excess oil in foods	do not eat more water in between meals
			veg curry	1 cup (100 gms)		veg curry	1 cup (100 gms)		
			papad	1 or 2		steamed	50 gms		



				in number		chicken			
						veg salad	51 gms		
	After dinner N/A	doesnt consume	-	10:00 PM	milk	100 gms	avoid large quantity	use low fat milk	
Sunday	Breakfast	11:00	Butter dosa	4 No	8:00 AM	Carrot idly ,ground nut chutney	4 no 1 small bowl	avoid oily fries	have breakfast on time for better health
	Mid meal	N/A	doesnt consume	-	10.30 AM	sprouts salad	1 small bowl		
	Lunch	3:00	Chicken biryani	3 bowls	1:00 PM	chapati Rice amarant hsdhal carrot fry curd	1 2small bowl(60 gms) 1 small bowl (30gms) 1 small bowl (100gms) 1 small bowl(50 gms)		try to include one protein source and vegetable source
	Evening	5:00	Sandwich,icecream	2 No,1	5:00 PM	brown bread toast boiled egg	2 slice 50gms	avoid junk foods	
	late evening N/A	doesnt consume	-	N/A	-	-			
	Dinner	22:00	Chapathis ,chicken	4 no, 2 small bowl	8 :00 PM	chapathis brinjal curry curd	2 no 1 small bowl 1 small bowl		
	After dinner 11:30 PM	Buttermilk	250 ml	10:30 PM	milk	150 ml	avoid sweets	induces sleep	