

What, Why and How?

Read this.....

DIABETES, A COMMON NON-COMMUNICABLE DISEASE

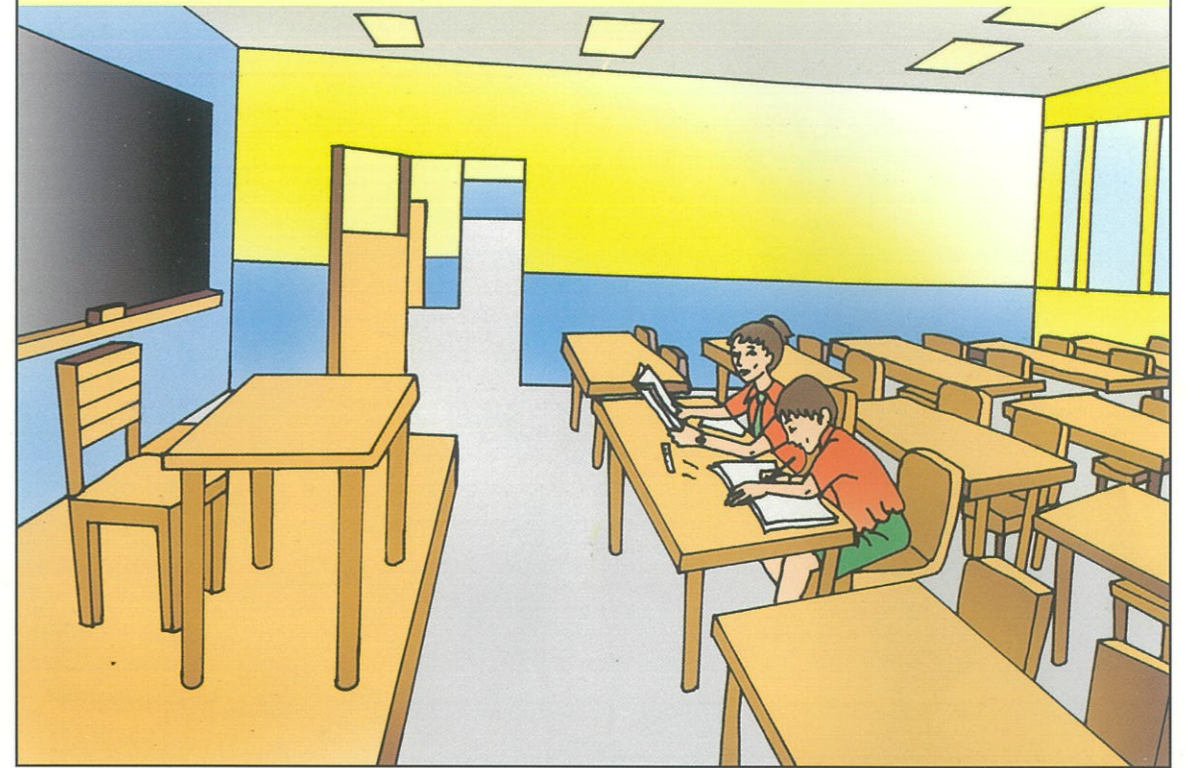


This is a story about two children like you and your friends. Rohan and Saira are thirteen year old twins, who live with their adopted parents, Mr. and Mrs. Shekar Saran and their daughter Seema aged 27, who is a doctor.

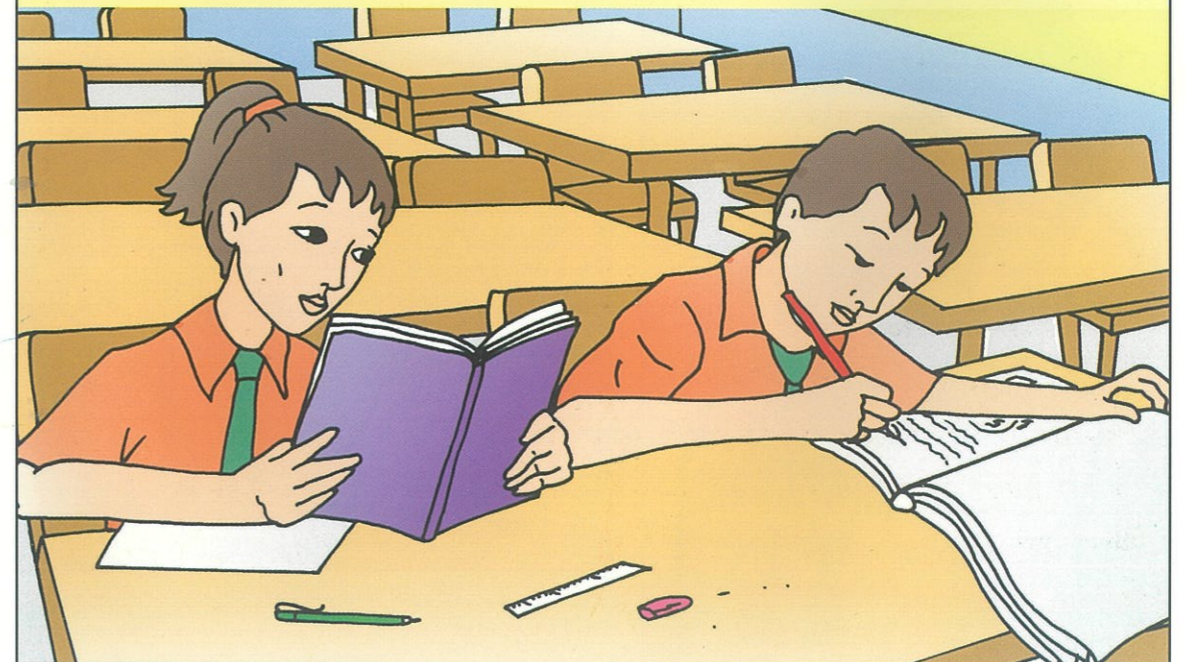
In this story Rohan and Saira discover all about the disease diabetes... why and how you get diabetes. Their interest to learn about the disease was because of their friend Tanya. Tanya's father is diagnosed as having diabetes. Dr. Seema, Rohan and Saira's sister help them to understand what diabetes is and why and how you get the disease. They also learn that we have a huge population of diabetic patients in India. There are 40 million persons affected by the disease. People know so little of this disease and there are so many myths around it that they felt it was important to sensitise their friends and parents about this disease. Since diabetes does not affect your everyday life one tends to ignore it not realizing it is a silent killer and by the time you realize the disease has progressed too far and has affected your other organs such as your heart, eye sight and kidneys. Diabetic management is not just "I do not eat sweets, do not have sugar in my tea or coffee or that I do not eat rice" It is much more than that. It means you have to change your lifestyle. Most of us do not like to change the way we live our lives but if we do not do it we will be the losers. For those of us who are lucky to be not affected by diabetes we should work at preventing ourselves from getting the disease.

All of us need to get educated on this important common non-communicable disease. Please read on.....and share the book with your friends. If any of your friends, older sister, brother, uncle, aunt or their parents want a copy of this book, they can pick it up from Butterflies office. The address is given on the back cover.

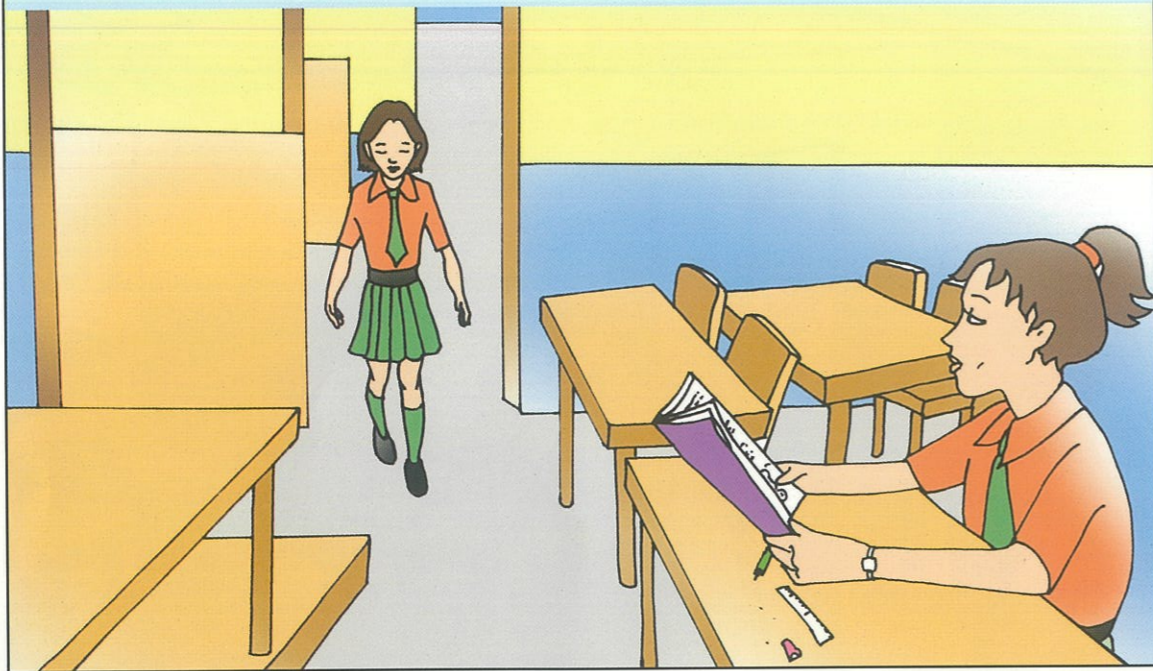
Saira and Rohan were sitting in their class during break.



While the rest of their classmates were out playing the twins were at work. Rohan was adding the finishing touches to his science project which he had to submit in the next period. Saira, who had already completed the assignment, was helping him.



Just then Saira notices someone enter the class and looks up.



It is their classmate Tanya. She looked very sad.



Hey Rohan, something is wrong with Tanya. She is usually so cheerful. But look at her now. She seems very upset.



Rohan looked at Tanya who apparently hadn't even noticed them.

You're right Saira. She certainly looks distressed. Come, let's find out.



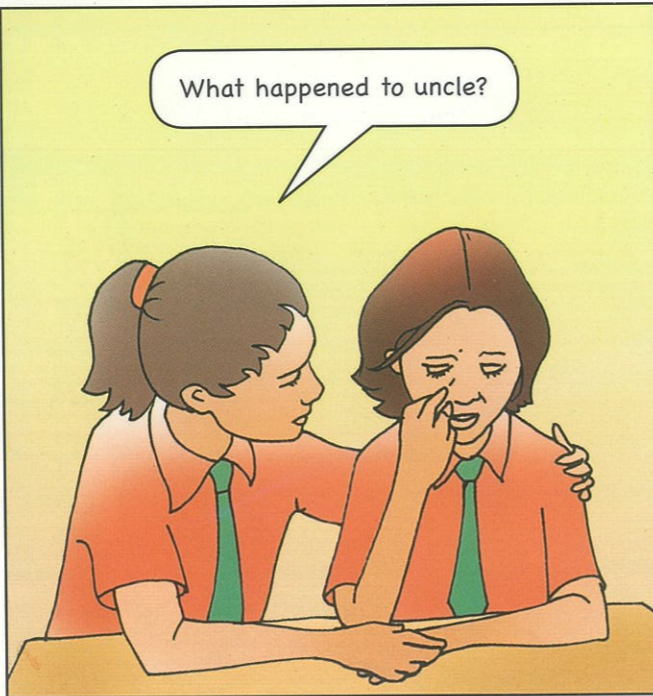
Tanya had taken her place in the second row and the twins go and sit beside her.



What's up Tanya?
Anything wrong?



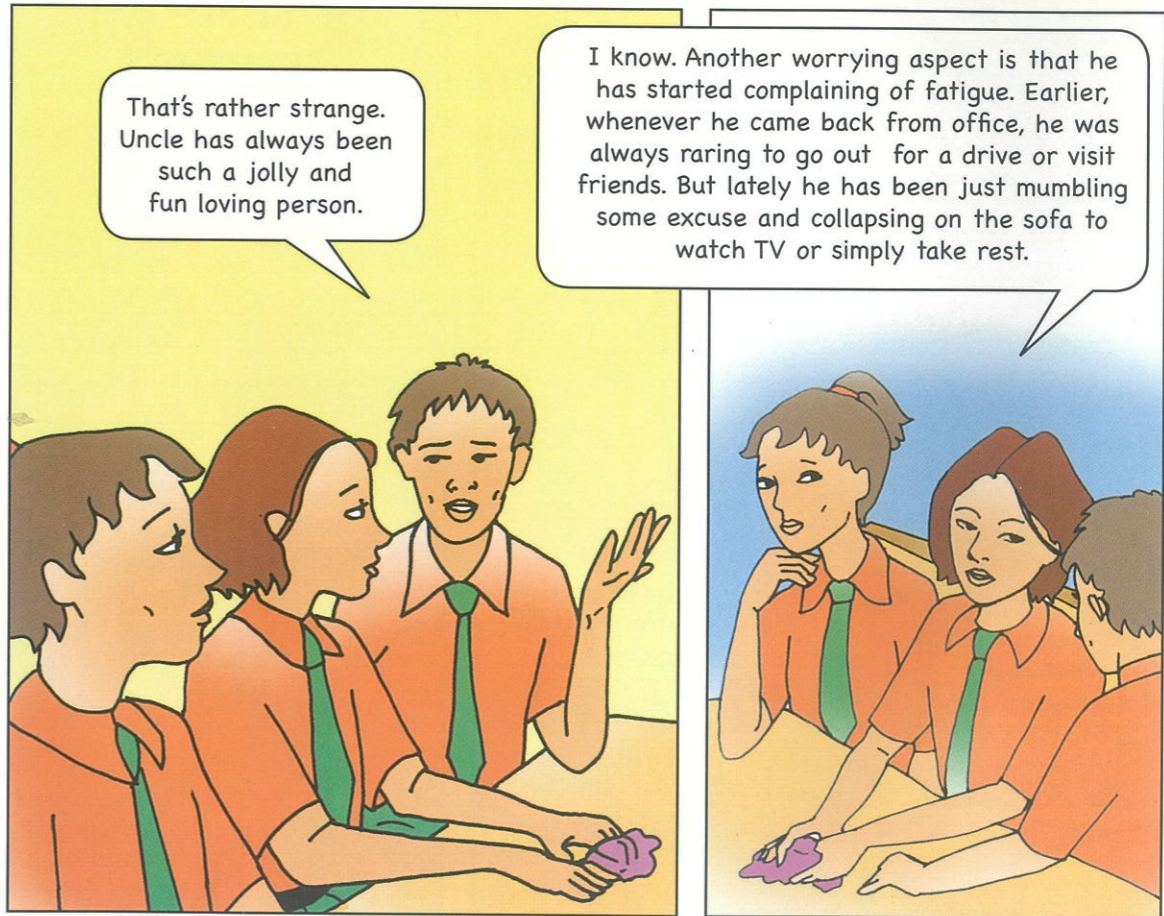
It...it's my father. He is not keeping well.



What happened to uncle?



Over the last few months he has lost a lot of weight. This despite the fact that his appetite has increased quite significantly. Besides, he has become very irritable.



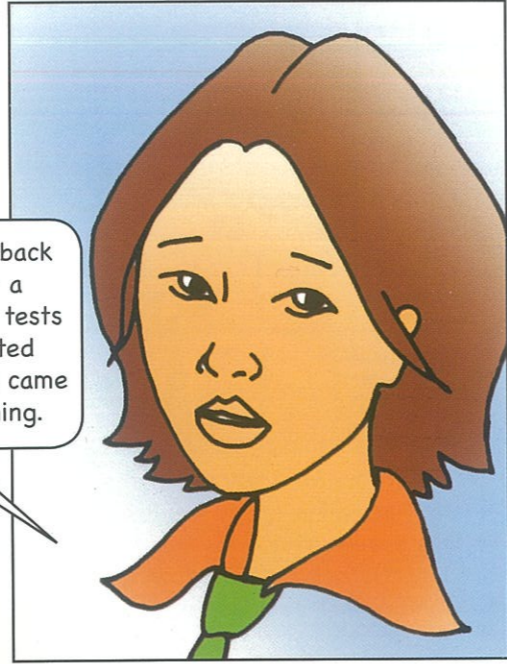
That's rather strange. Uncle has always been such a jolly and fun loving person.

I know. Another worrying aspect is that he has started complaining of fatigue. Earlier, whenever he came back from office, he was always raring to go out for a drive or visit friends. But lately he has been just mumbling some excuse and collapsing on the sofa to watch TV or simply take rest.



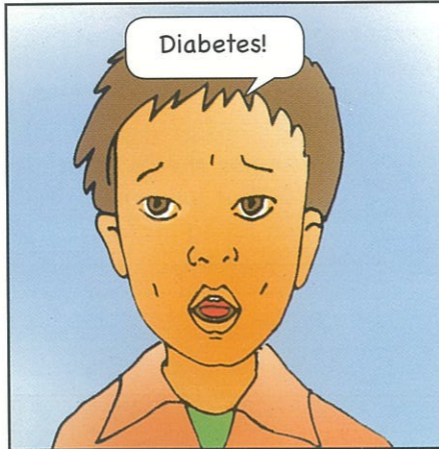
Has he been taken to a doctor?

Yes, two days back he went for a checkup. Many tests were conducted and the results came out this morning.



What is the diagnosis?

The doctor said he is suffering from diabetes.



Diabetes!



How serious is that?



I really don't know. Dad did not say much and Mum too didn't elaborate.



Why don't we ask Seema didi?

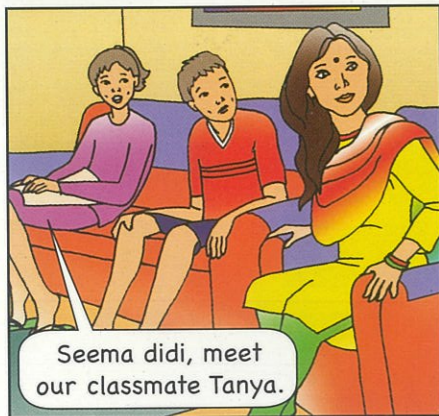
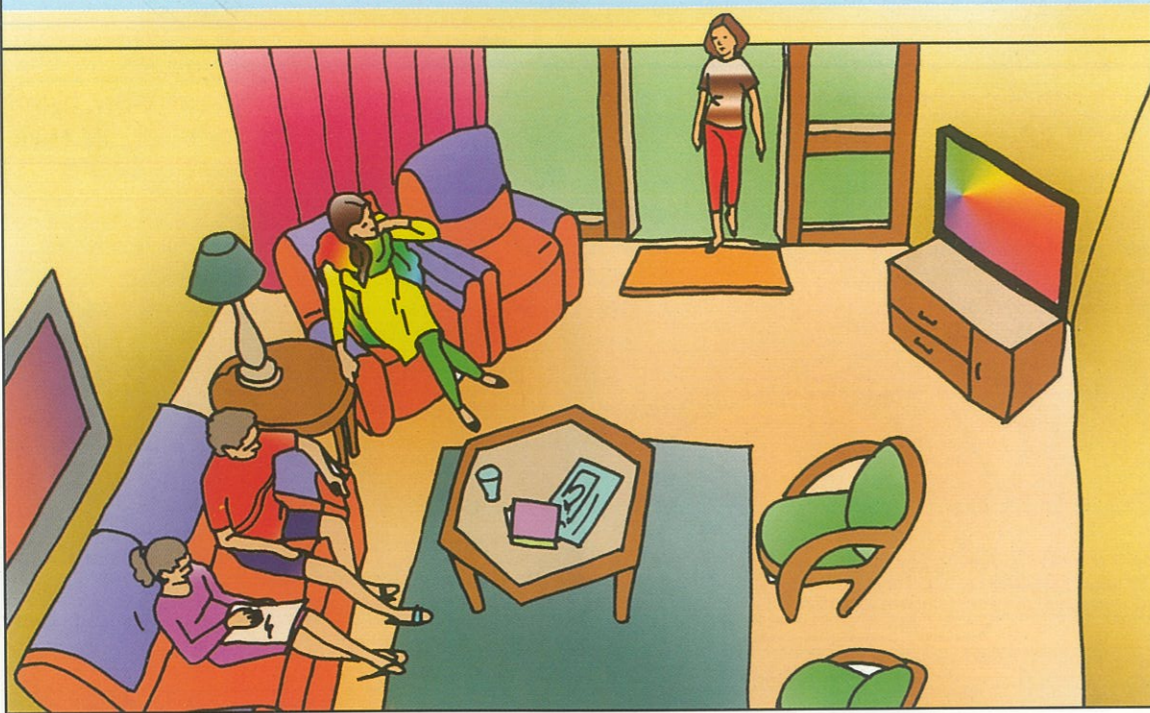
Ya, she is a doctor and can clear our doubts.



Tanya, why don't you come home with us after school? Seema didi would be at home since she goes to the hospital only at five. We will have enough time to speak to her.

Okay. Thanks, a lot.

The twins and Seema were sitting in the living room of their house when Tanya entered.



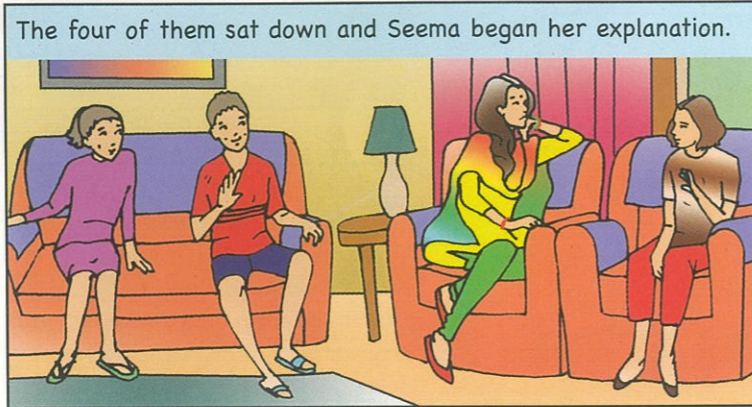
Seema didi, meet our classmate Tanya.



Didi, Tanya's father, Uncle Kurien, is suffering from diabetes. We would like to know something about the disease.



Okay. Let's first settle down comfortably.



The four of them sat down and Seema began her explanation.

Diabetes is a disease that affects the metabolism. People who have diabetes either do not produce enough insulin as they used to or have insulin resistance, or, they no longer produce any insulin at all.



If not managed effectively it can be a lethal disease.

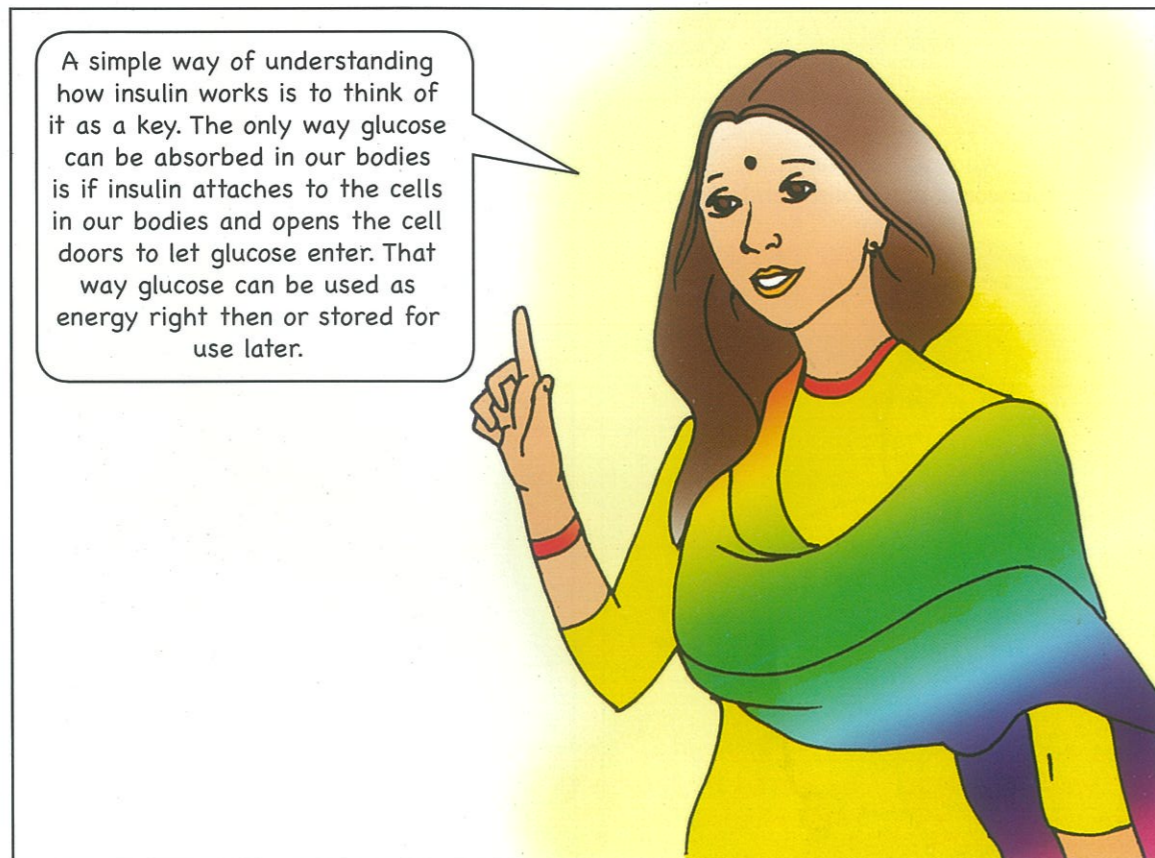
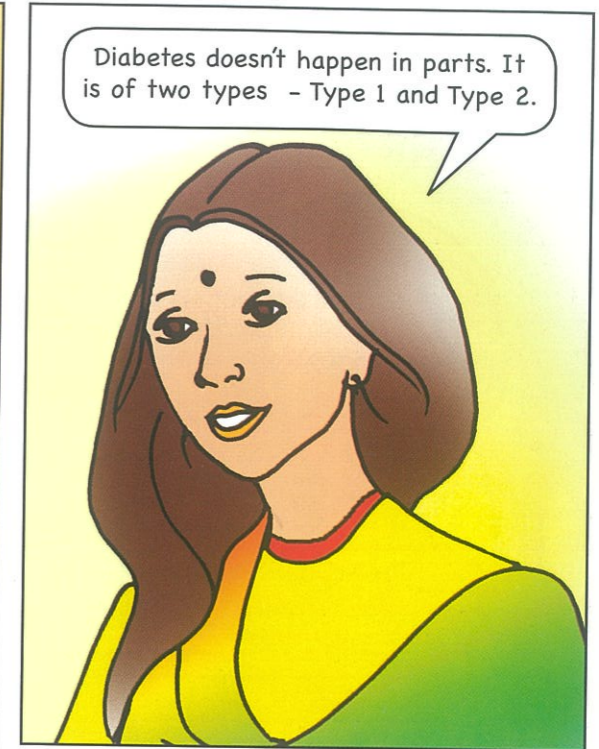
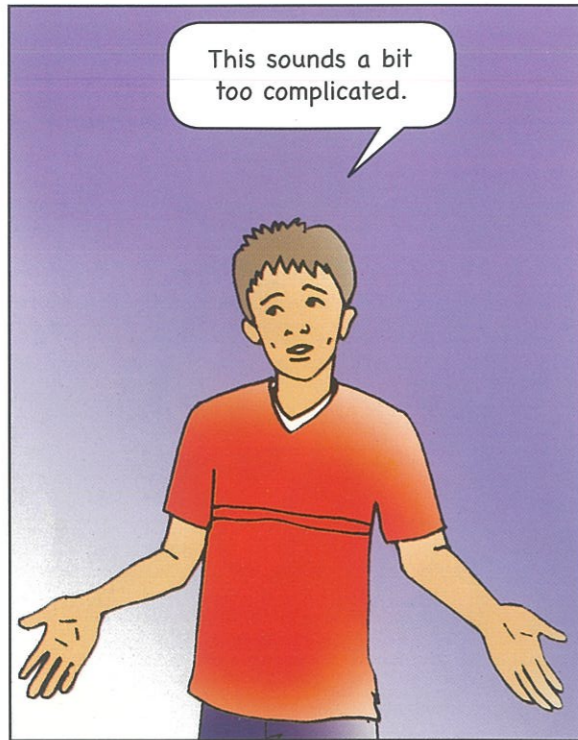


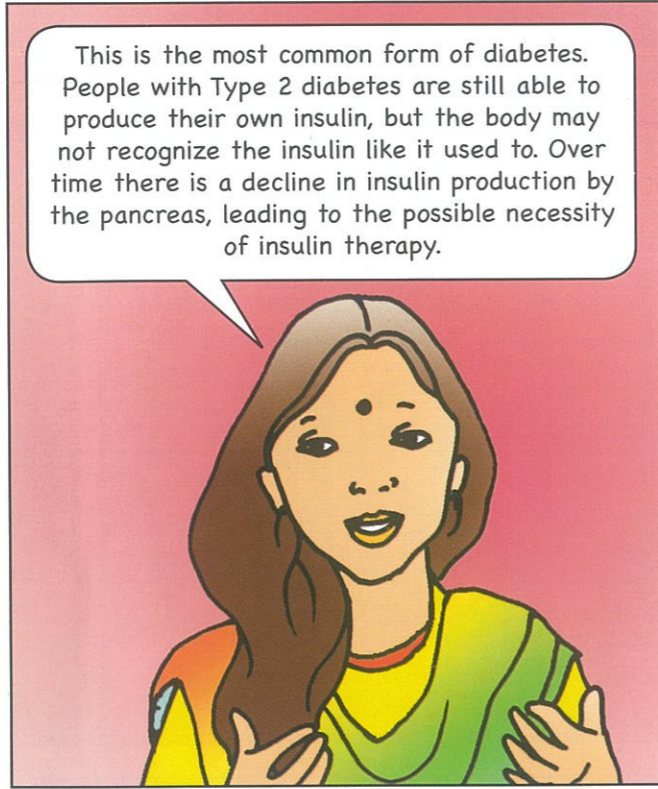
Didi, what do you mean by the words metabolism and insulin?

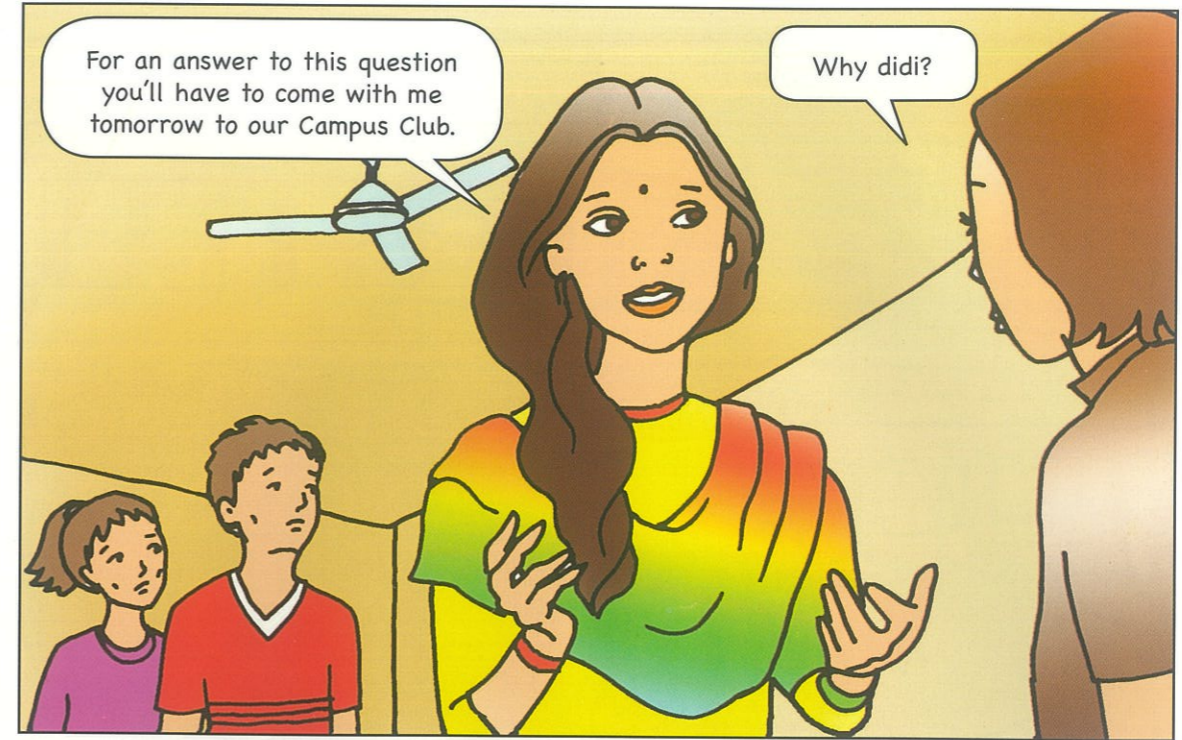


Metabolism is a term for the chemical processes that occur in a living organism resulting in energy production and growth. Insulin is a hormone that is produced by the pancreas - an organ that lies behind the stomach - to keep blood sugar or glucose regulated throughout the day.



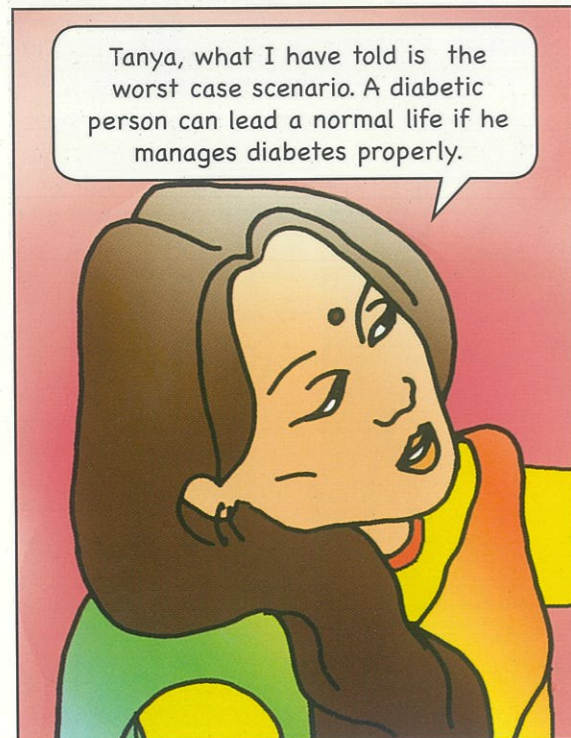




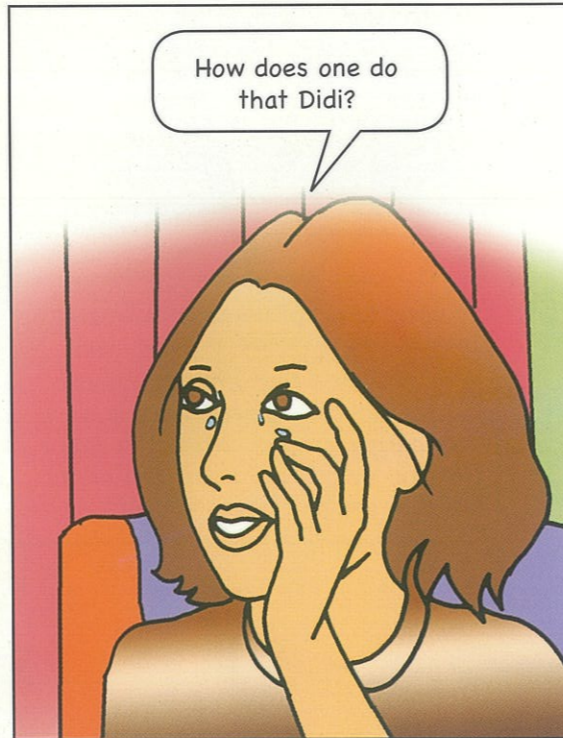


For an answer to this question you'll have to come with me tomorrow to our Campus Club.

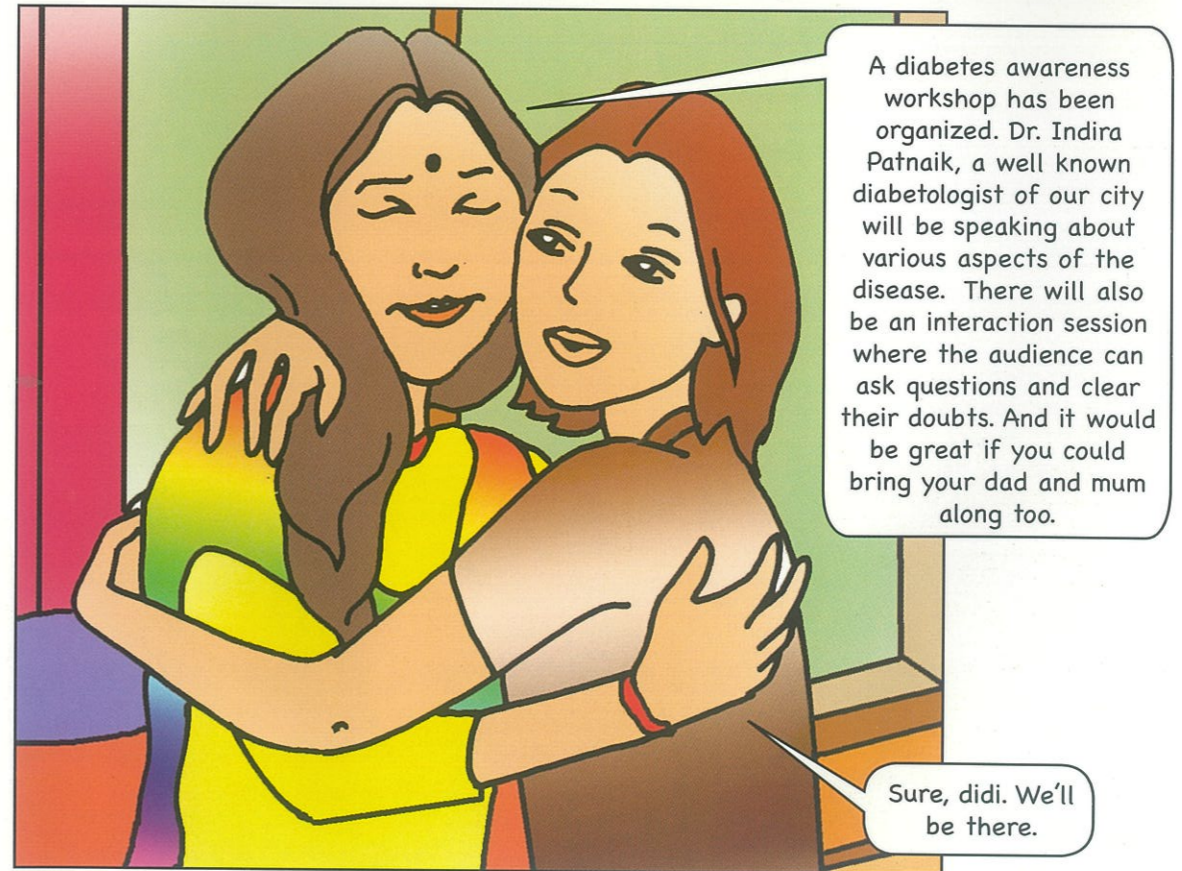
Why didi?



Tanya, what I have told is the worst case scenario. A diabetic person can lead a normal life if he manages diabetes properly.



How does one do that Didi?



A diabetes awareness workshop has been organized. Dr. Indira Patnaik, a well known diabetologist of our city will be speaking about various aspects of the disease. There will also be an interaction session where the audience can ask questions and clear their doubts. And it would be great if you could bring your dad and mum along too.

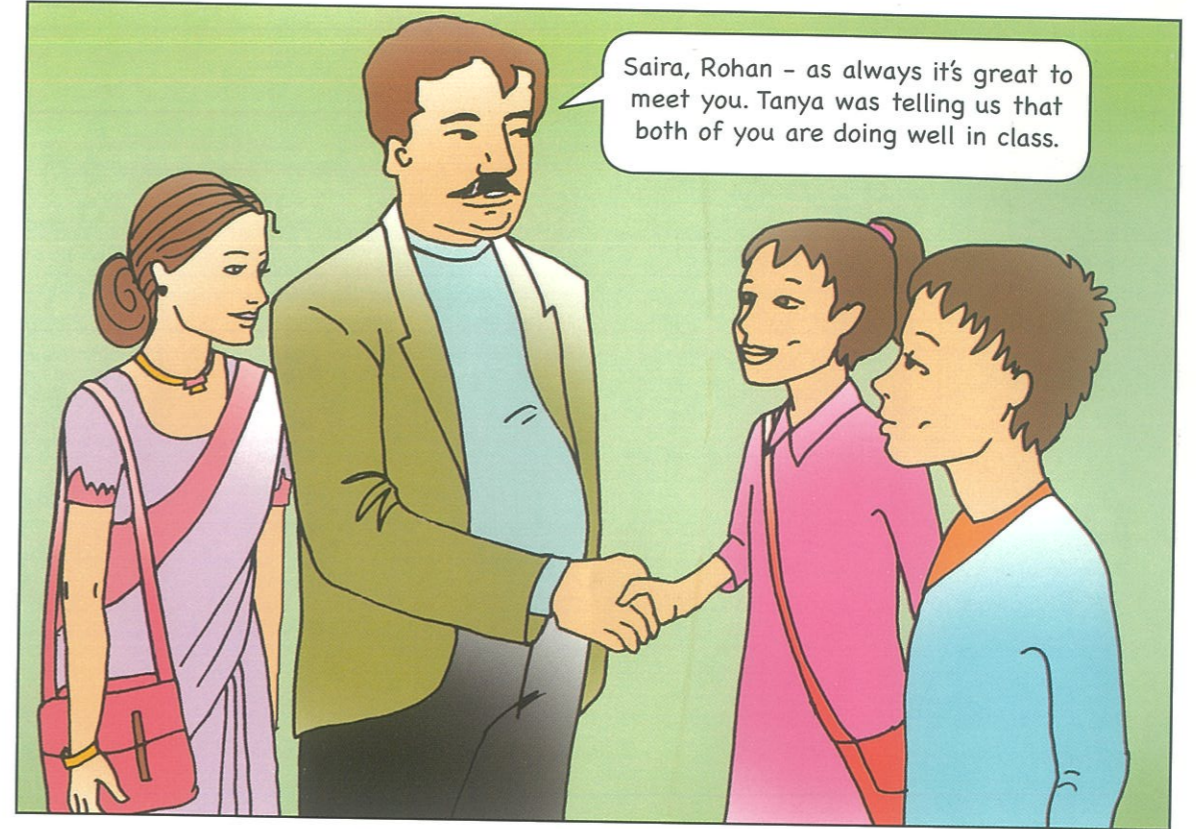
Sure, didi. We'll be there.

The next evening at around seven, the twins and Seema meet Tanya and her parents at the Campus Club.

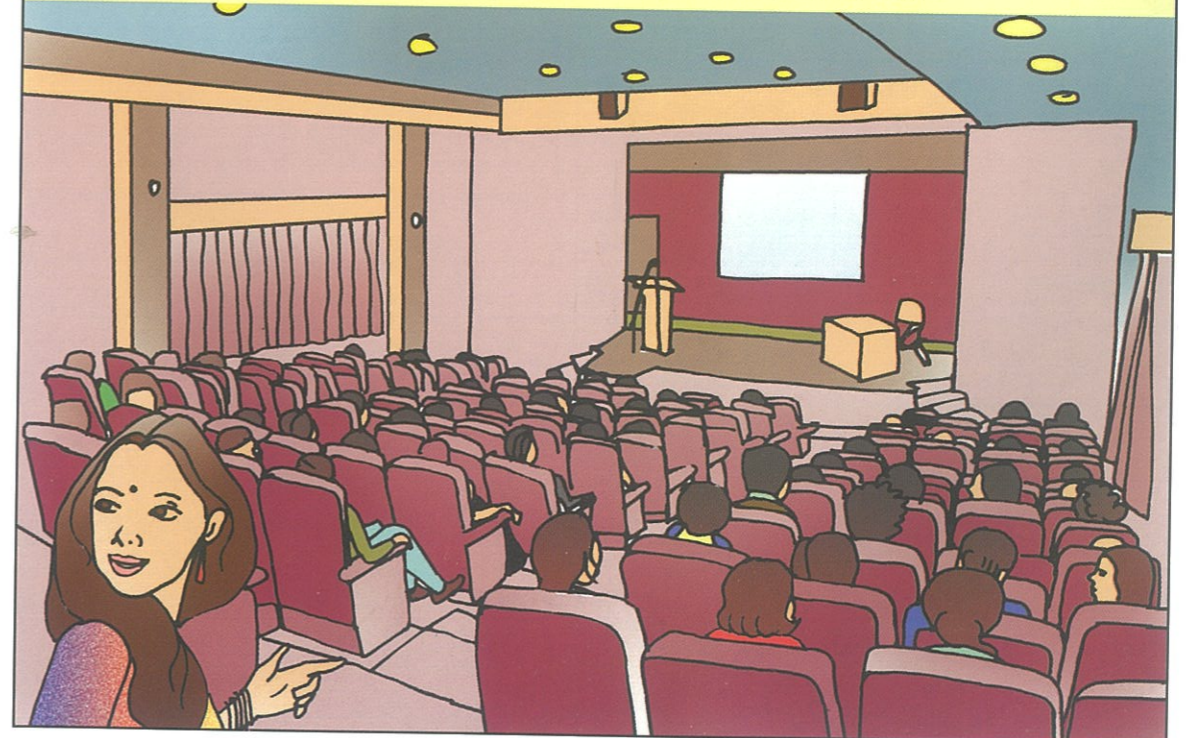


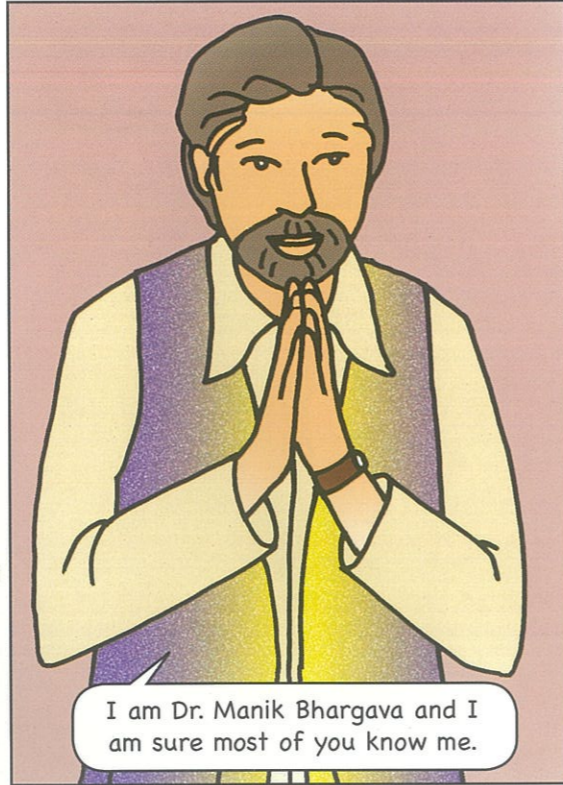
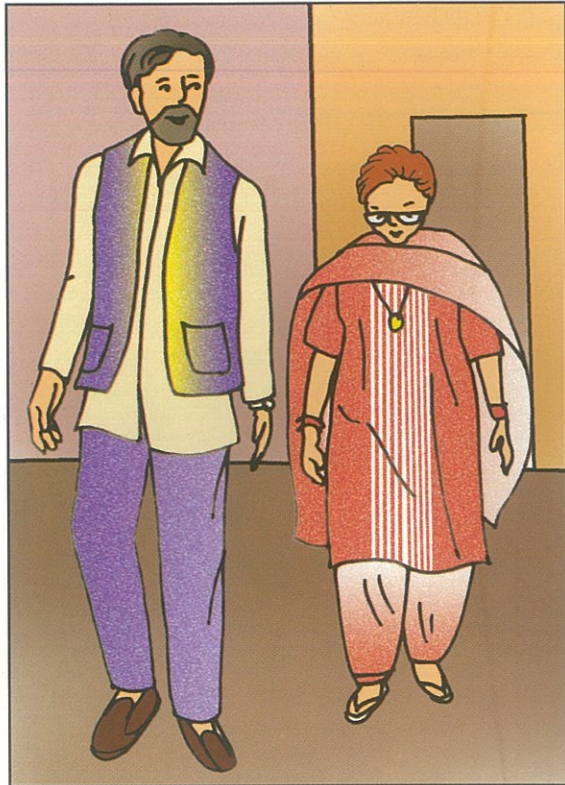
Uncle has lost some weight since I last saw him. He also looks a bit tired.

He looks more worried than tired.

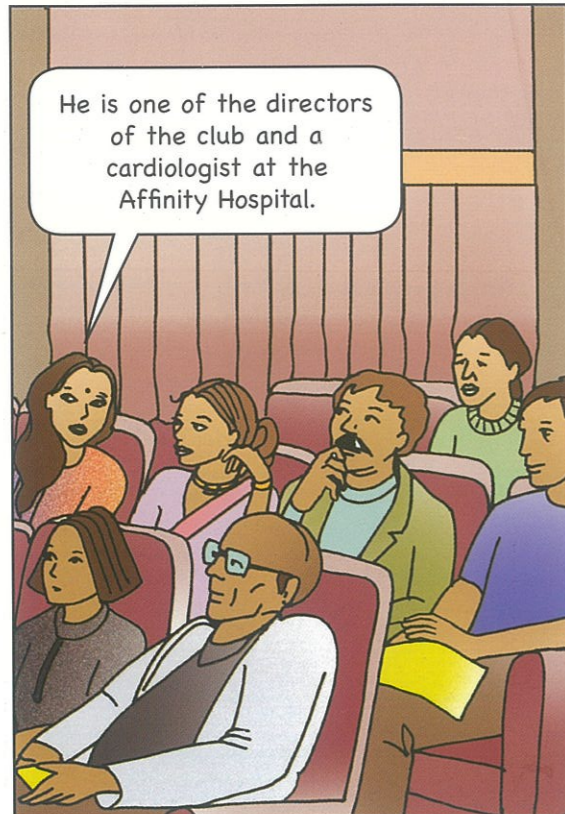


Seema led them into a large hall. They took their seats in the third row.

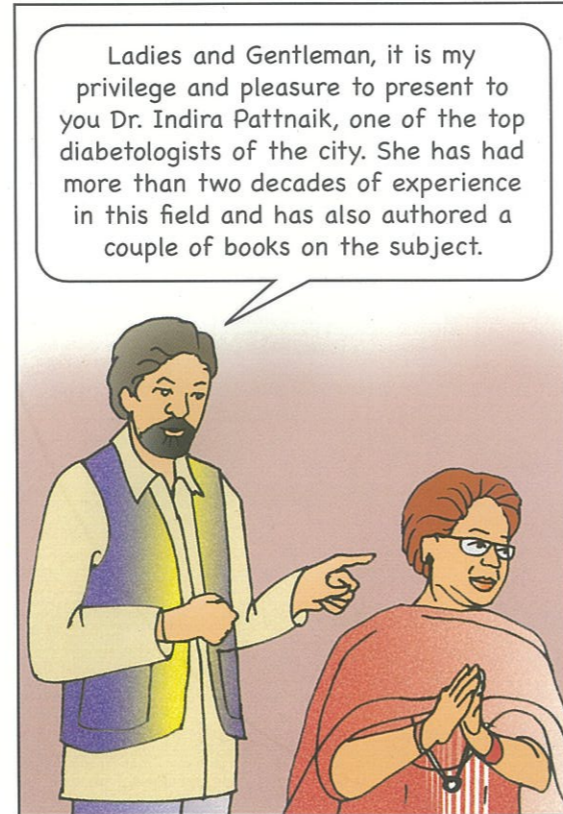




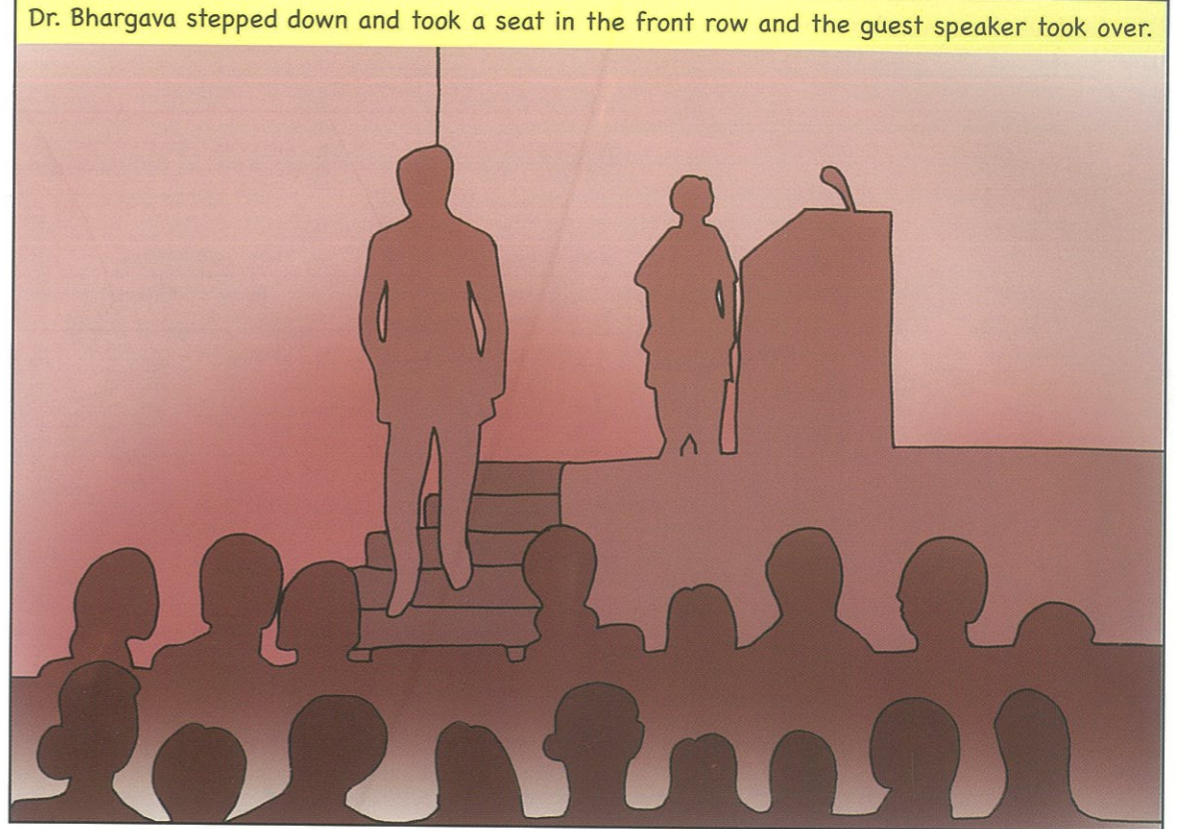
I am Dr. Manik Bhargava and I am sure most of you know me.



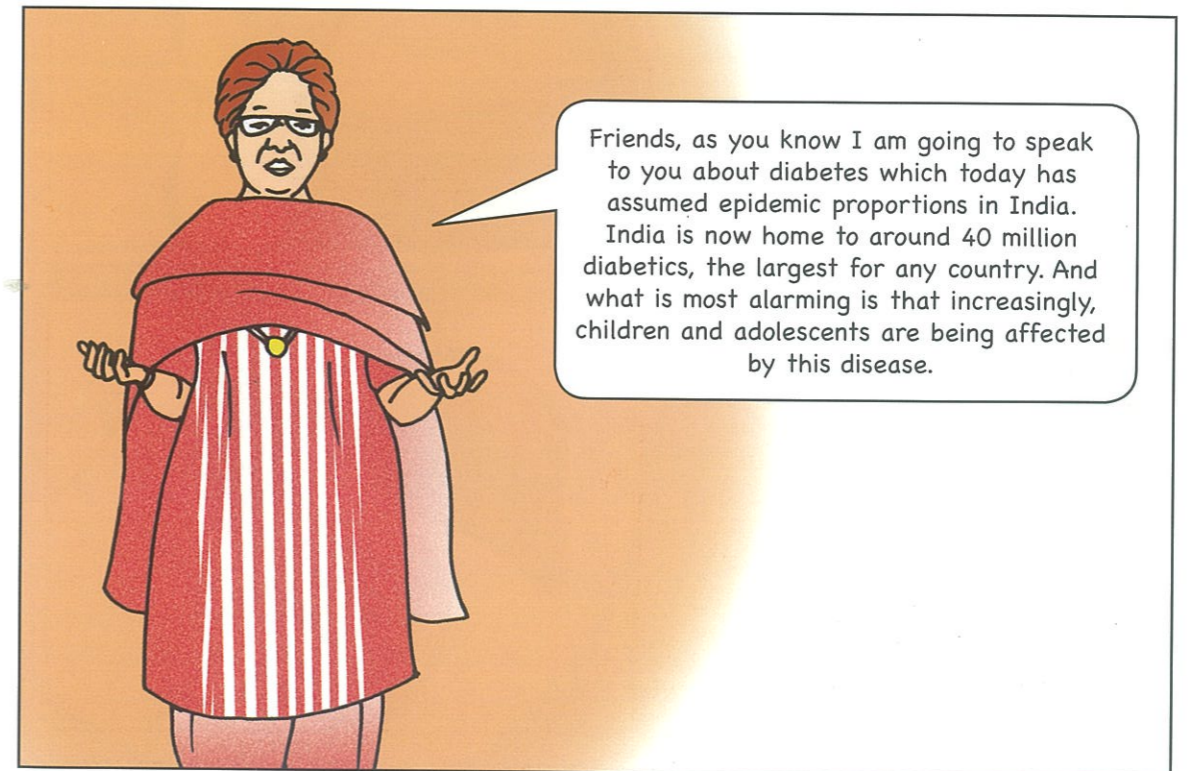
He is one of the directors of the club and a cardiologist at the Affinity Hospital.



Ladies and Gentleman, it is my privilege and pleasure to present to you Dr. Indira Pattnaik, one of the top diabetologists of the city. She has had more than two decades of experience in this field and has also authored a couple of books on the subject.

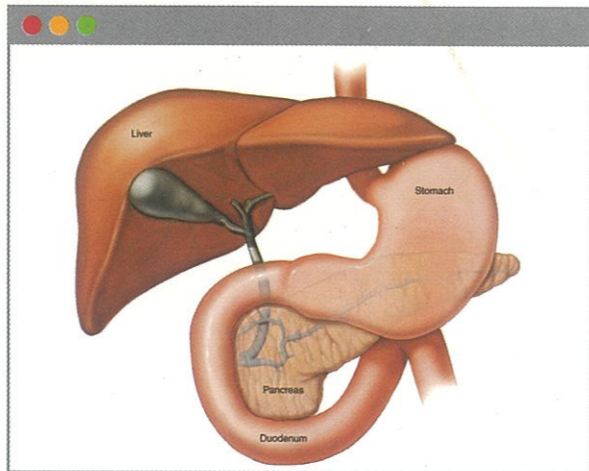
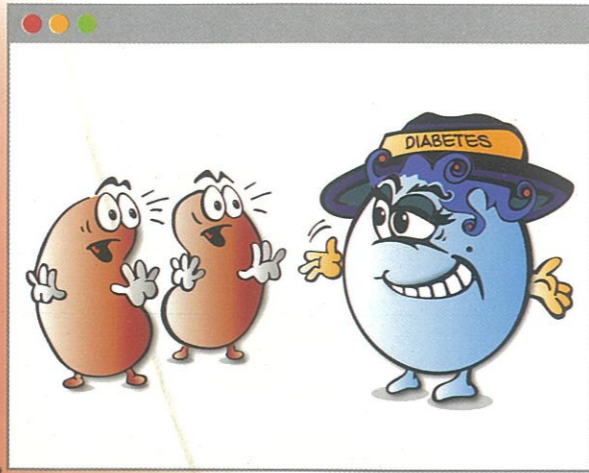


Dr. Bhargava stepped down and took a seat in the front row and the guest speaker took over.



Friends, as you know I am going to speak to you about diabetes which today has assumed epidemic proportions in India. India is now home to around 40 million diabetics, the largest for any country. And what is most alarming is that increasingly, children and adolescents are being affected by this disease.

Dr. Pattnaik then went on to speak about the types of diabetes, symptoms of the disease and causes of diabetes. Her lecture was supported by a powerpoint presentation.



Now I come to a very important part of my presentation. And that deals with the management of diabetes. I will explain how healthy lifestyle choices in diet, exercise, and other health habits can help in the effective management of diabetes.

Major Diabetes Complications

Eyes (retinopathy)

Oral health

Heart and coronary circulation
(coronary heart disease)

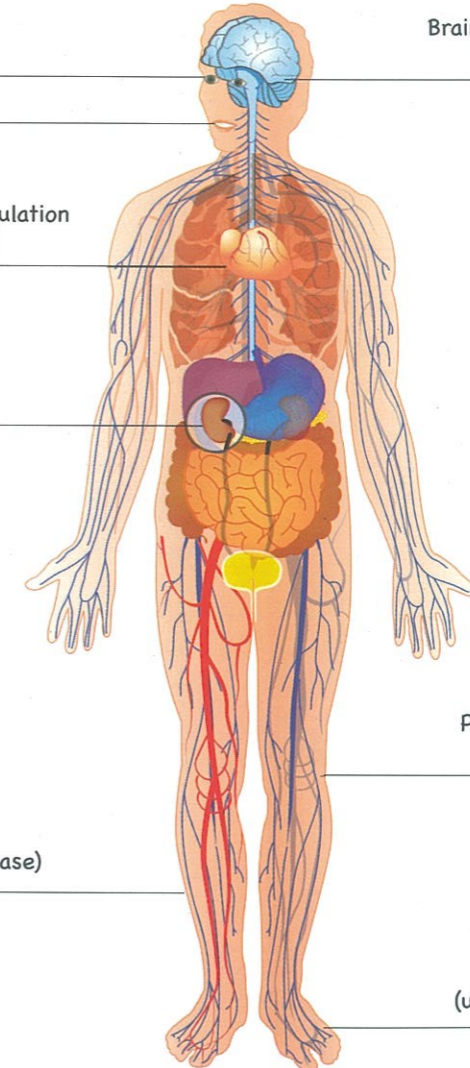
Kidney
(nephropathy)

Lower limbs
(peripheral vascular disease)

Brain and cerebral circulation
(cerebrovascular disease)

Peripheral nervous system
(neuropathy)

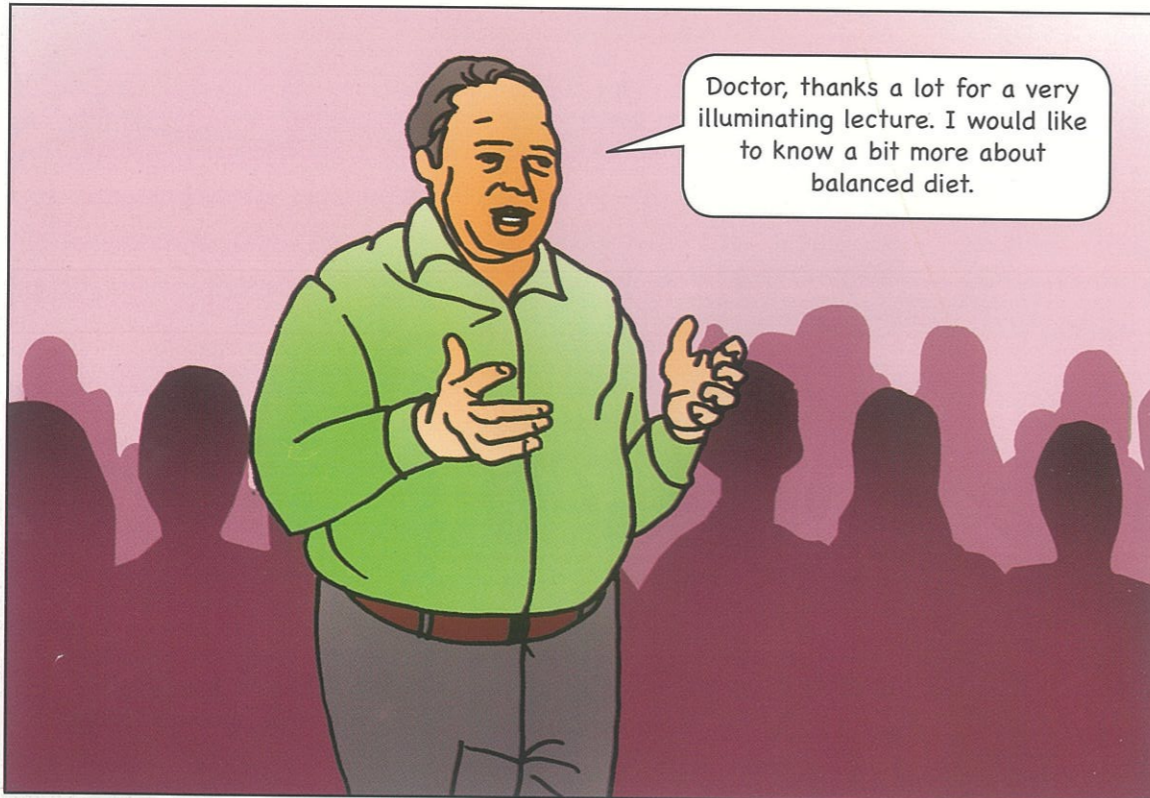
Diabetic foot
(ulceration and amputation)



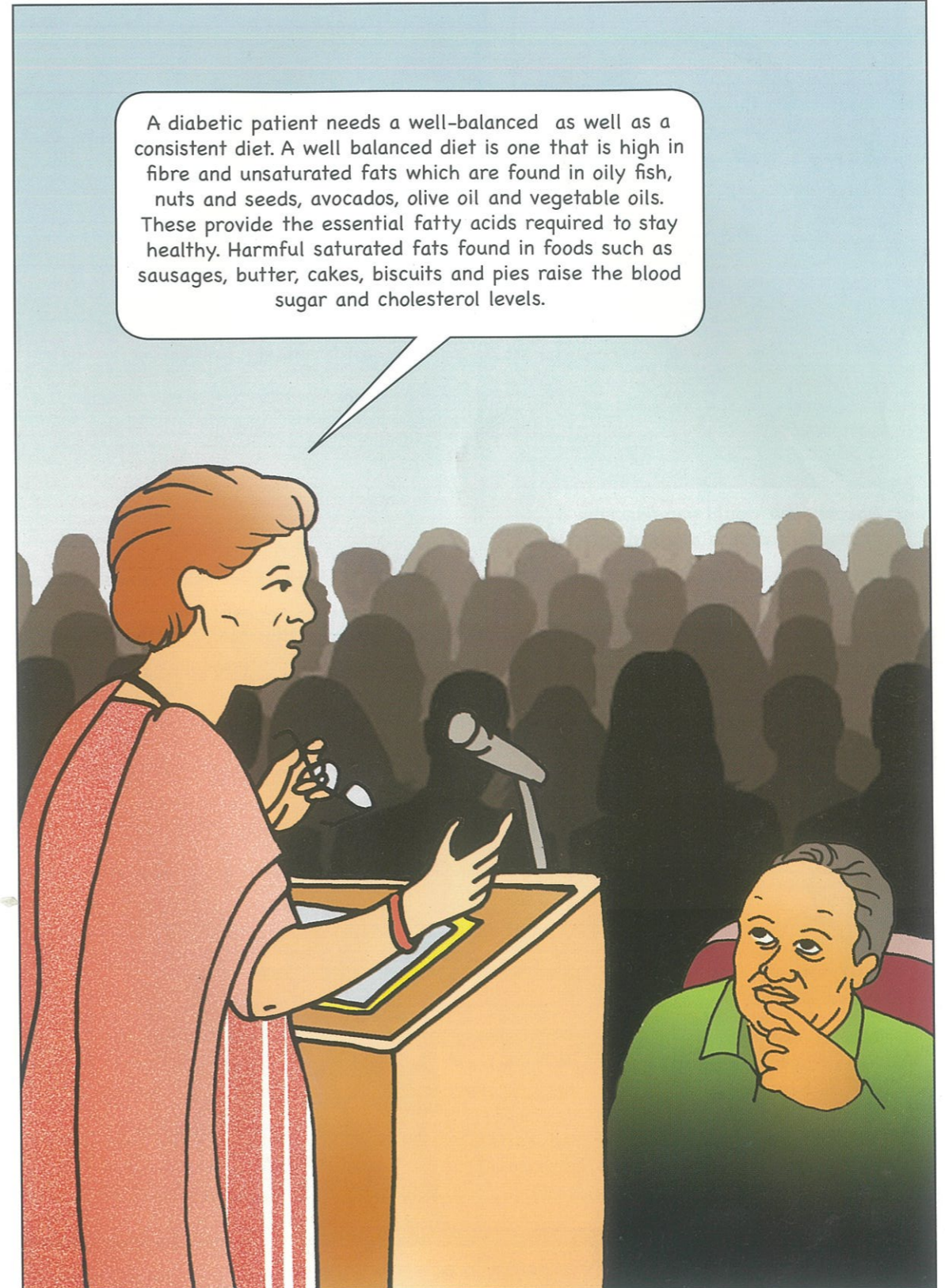
I hope I have been able to communicate to you the various aspects of the disease. Now I would like you to ask me questions on the issues which I have discussed as well as any other facet of the ailment which you feel needs to be clarified.

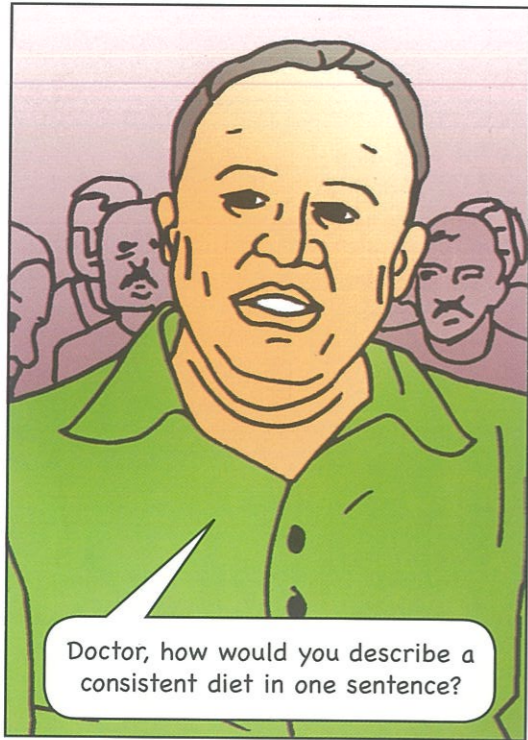


Doctor, thanks a lot for a very illuminating lecture. I would like to know a bit more about balanced diet.



A diabetic patient needs a well-balanced as well as a consistent diet. A well balanced diet is one that is high in fibre and unsaturated fats which are found in oily fish, nuts and seeds, avocados, olive oil and vegetable oils. These provide the essential fatty acids required to stay healthy. Harmful saturated fats found in foods such as sausages, butter, cakes, biscuits and pies raise the blood sugar and cholesterol levels.

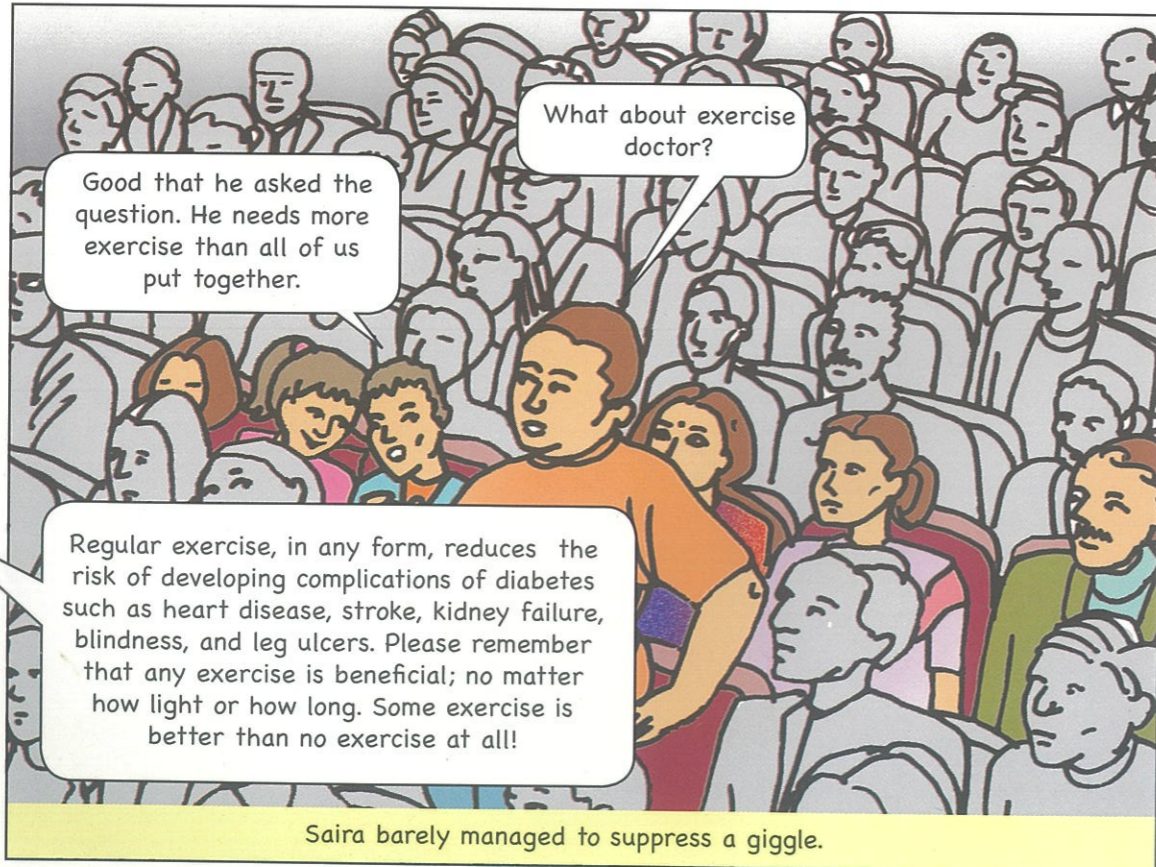




Doctor, how would you describe a consistent diet in one sentence?



A consistent diet includes roughly the same number of calories at about the same times of the day.



What about exercise doctor?

Good that he asked the question. He needs more exercise than all of us put together.

Regular exercise, in any form, reduces the risk of developing complications of diabetes such as heart disease, stroke, kidney failure, blindness, and leg ulcers. Please remember that any exercise is beneficial; no matter how light or how long. Some exercise is better than no exercise at all!

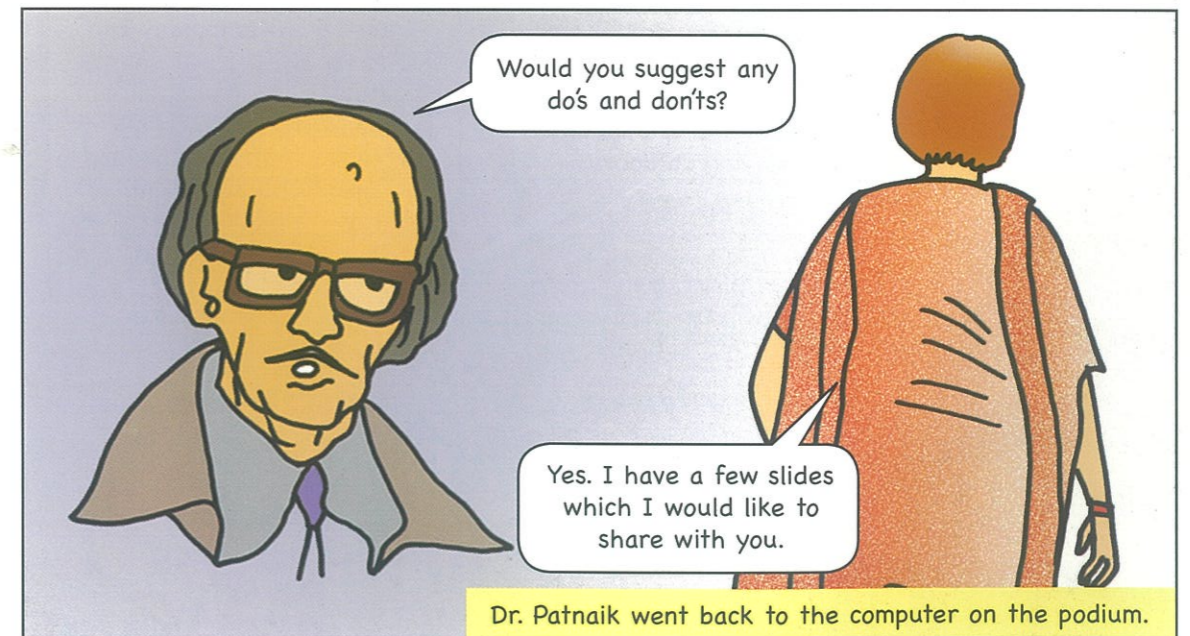
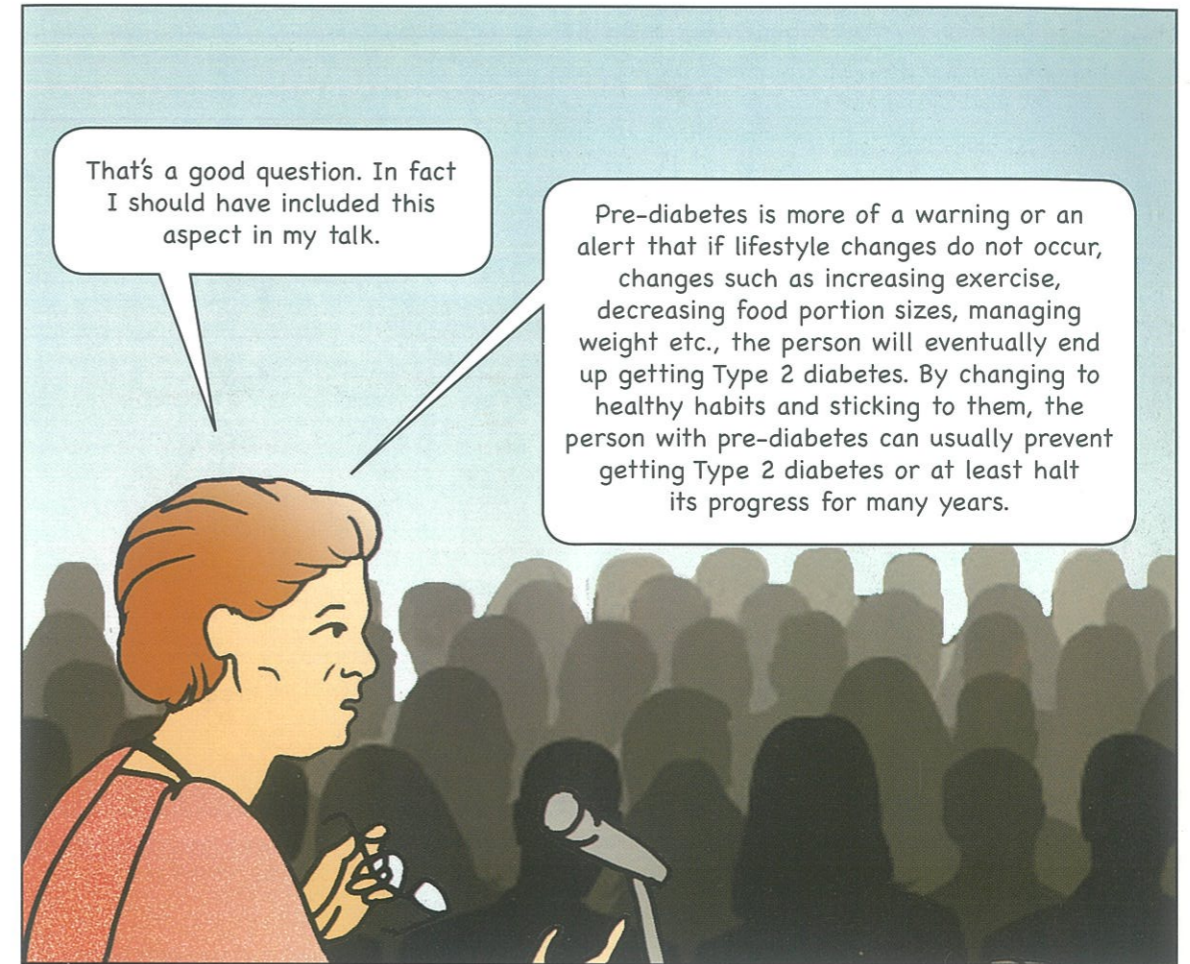
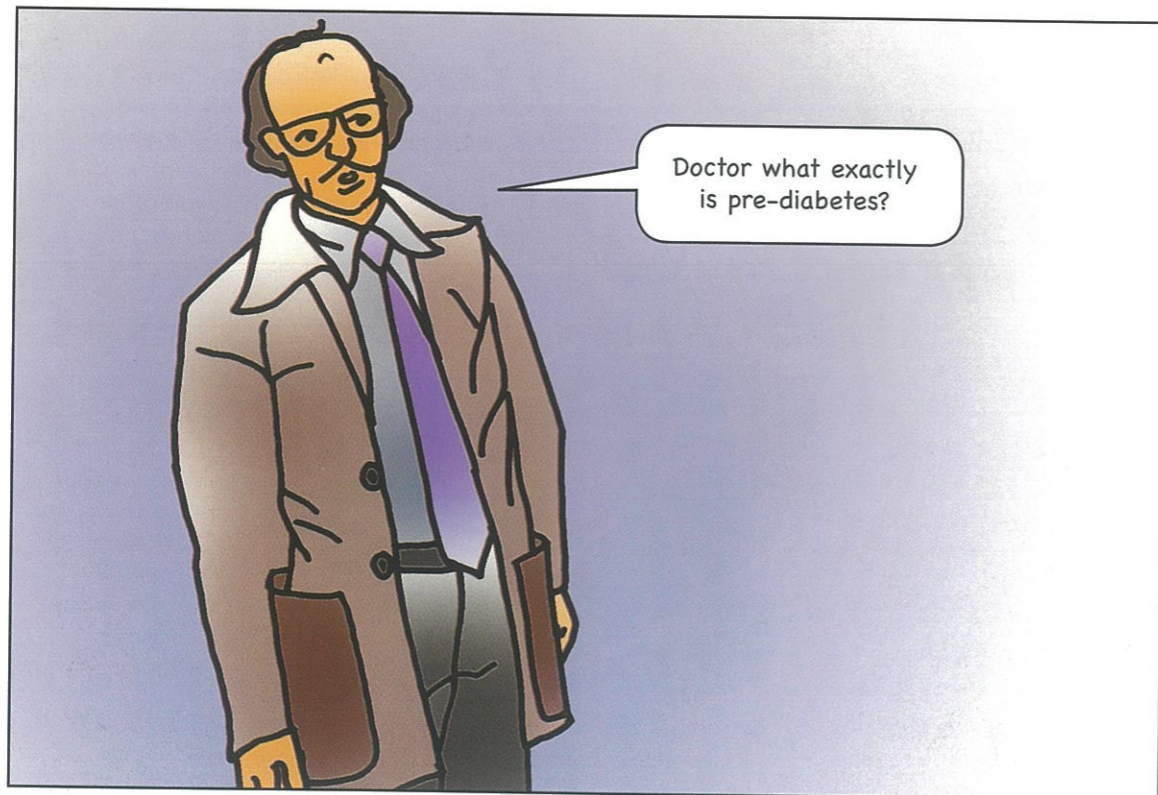
Saira barely managed to suppress a giggle.



Dr. Patnaik, how harmful is smoking or chewing tobacco?



If you have diabetes, and you smoke cigarettes or use any other form of tobacco, you are raising the risks markedly for nearly all of the complications of diabetes. Smoking damages blood vessels and contributes to heart disease, stroke, and poor circulation in the limbs.



The slides came on and Dr. Patnaik read them out.

- Avoid soft drinks, sweeteners, fried items.
- Eat plenty of fruits and vegetables.

- Take green leafy vegetables regularly.
- Avoid oil

- Minimize the intake of red meat
- Exercise regularly. Exercise for one hour or at least half an hour daily.

- Do not indulge in substance abuse.
- Do yoga regularly and, if possible, practice meditation.

After the lecture the Kuriens invited the trio to their house which was not very far off.

Wow! I really must reduce my time surfing the internet, chatting online and watching television from 3 hours to just 2 hours and spend more time playing outdoors.

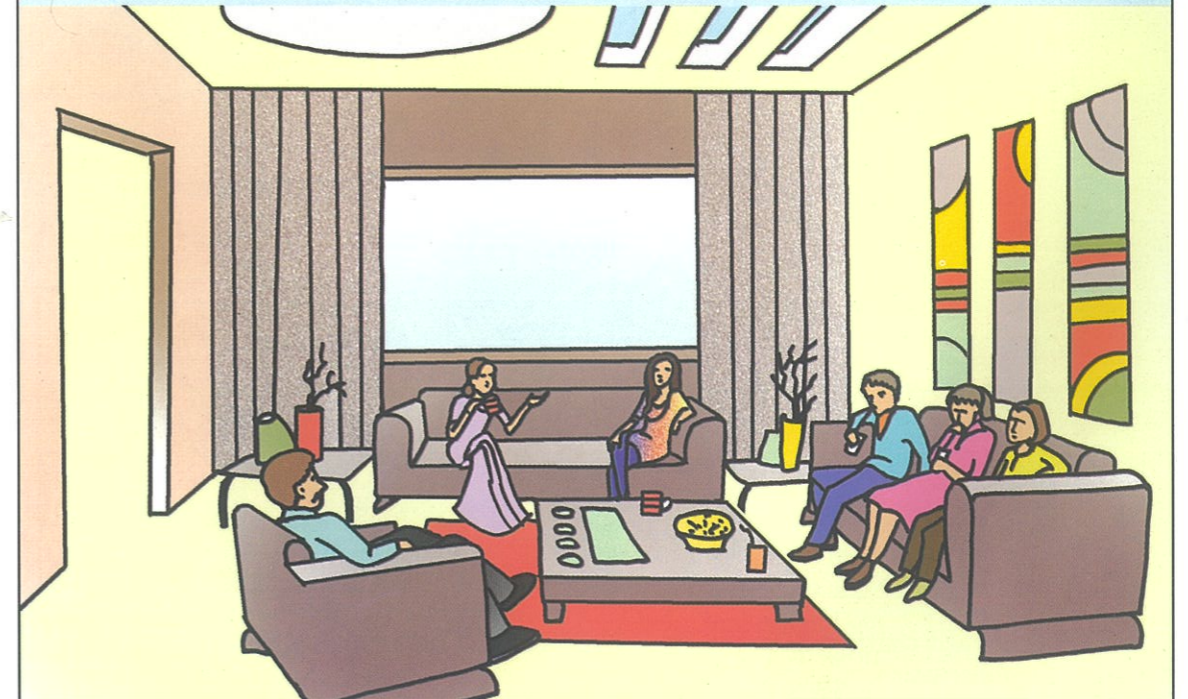
Hmm.... I did not realize what harm gorging on burgers, French fries every day can do to my body. I will eat my vegetables and fruits and not look at them as poison but as nutrients that will make me smart and intelligent.



They went in Mr. Jacob Kuriens rather spacious car.



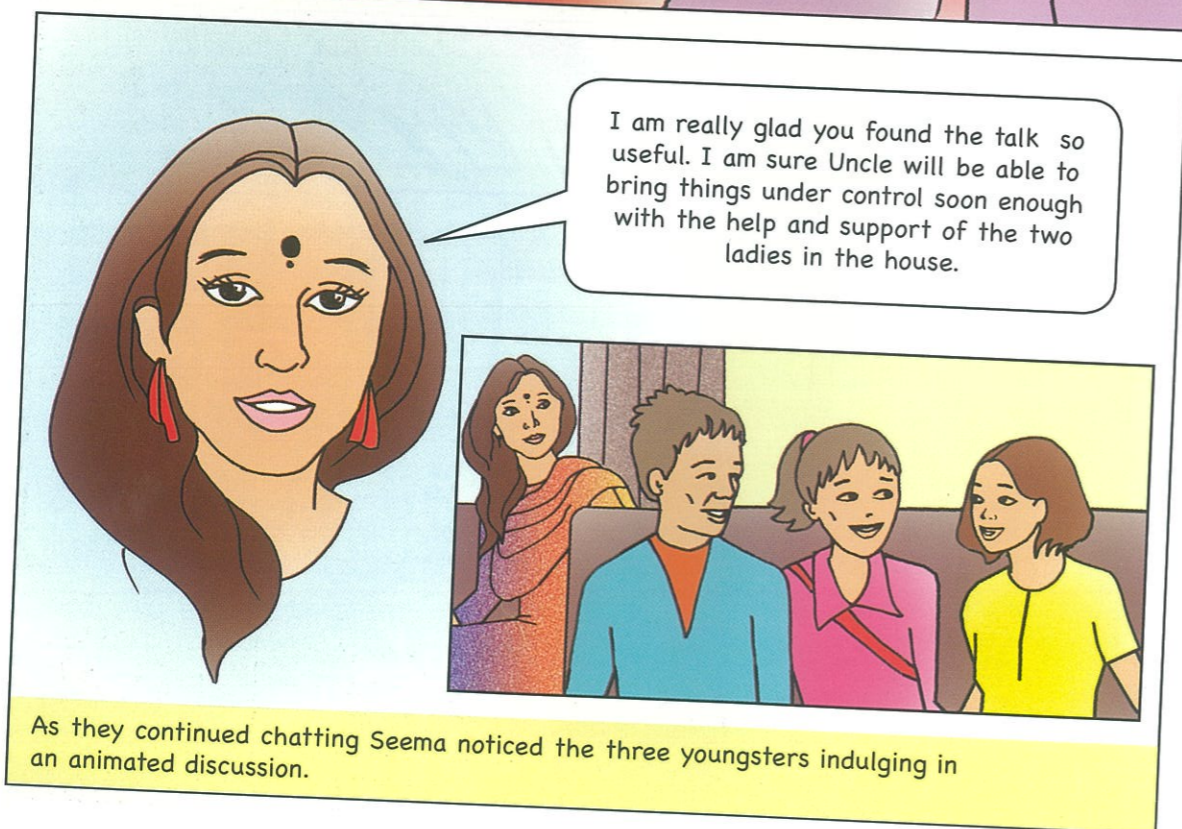
Half an hour later they were sitting in the living room of Tanya's compact home eating upma made by her mum and sipping orange juice.





Thanks Seema, the lecture was truly illuminating. A lot of my misconceptions were cleared.

True. I was really worried. There is so much of confusion regarding diabetes. I am relieved that the disease can be managed quite effectively with life style changes.



I am really glad you found the talk so useful. I am sure Uncle will be able to bring things under control soon enough with the help and support of the two ladies in the house.

As they continued chatting Seema noticed the three youngsters indulging in an animated discussion.



What are you guys discussing with such great interest?

Didi, Tanya has just come up with an awesome idea.



Really! Let's hear it.

In our school they have put a programme in place called Continuous Comprehensive Evaluation. As a part of this, we have to do an assignment which is submitted for evaluation. We were thinking that we can take up creating awareness about diabetes as our project.

And we could visit neighbourhood in and around our campus to spread the word.





I think that's a good idea, but one or two exposures will not give you the expertise to talk about the disease.



Uncle, we will sit with Seema didi and make elaborate notes on exactly what and how we have to communicate.

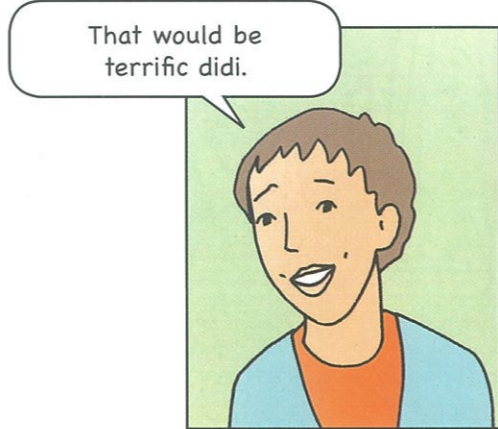
And dad, we will also divide the information into three parts. Each of us will explain one section. This way it would be much easier for us to remember and describe.



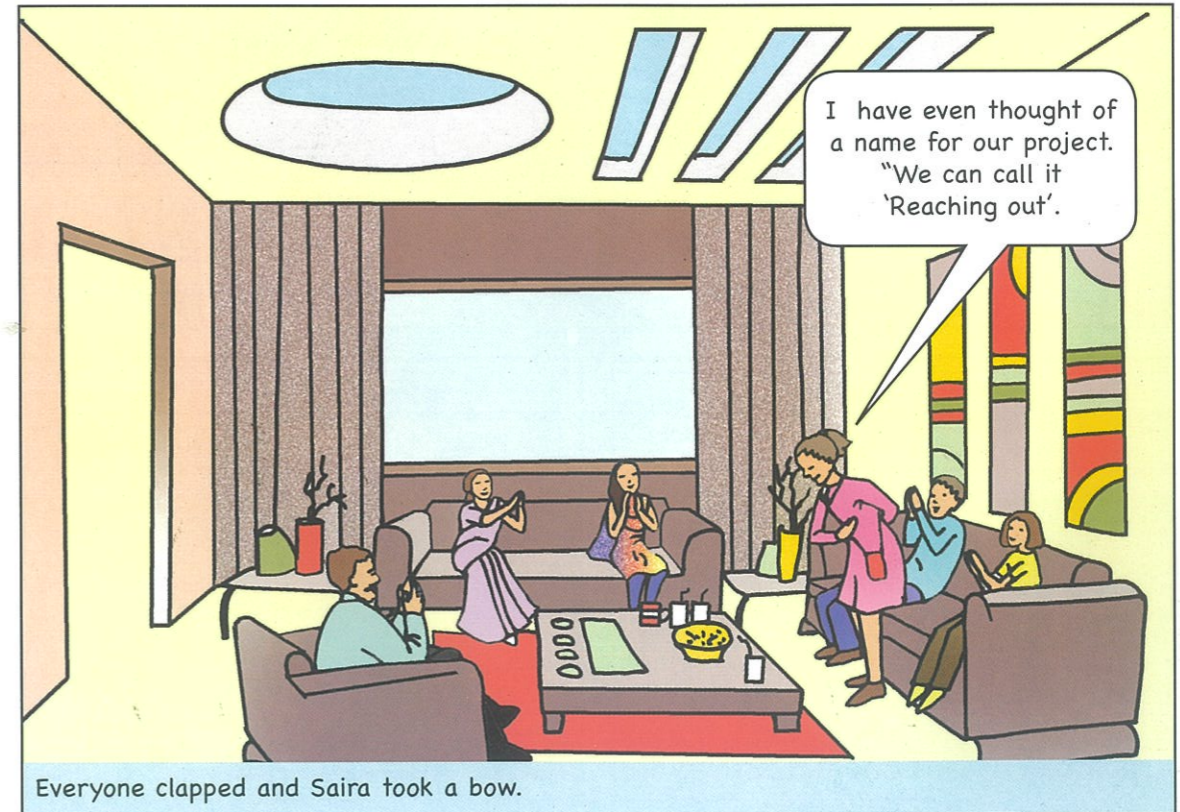
That's wonderful guys. You should go ahead. You will be doing a great service to the society.



I think apart from giving you information and some literature on diabetes, I'll help out in other ways too. The hospital where I work holds a diabetes clinic every Monday from four to six in the evening. Here we treat as well as give medicines free of cost to the poor. You can ask any person who is suffering or seem to be suffering from diabetes to visit our clinic.



That would be terrific didi.



I have even thought of a name for our project. "We can call it 'Reaching out'."

Everyone clapped and Saira took a bow.

Two months later the twins, Tanya and Seema were once again sitting in Tanya's house. It was Mr. Kurien's birthday and he had decided to invite the three of them.



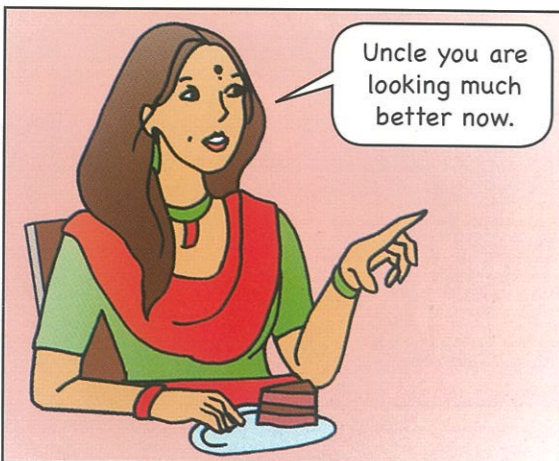
Ya, for the first time in years, his paunch has disappeared.



Thanks, Seema. I have been going for a forty five minute brisk walk every day. Besides, I am also doing yoga and practising meditation. I am not only looking good, but feeling good too.



Seema didi, Dad is also following a strict diet. Earlier, he would splurge on sweets and junk food but now he is far more controlled. Poor darling, he simply looks the other way when I am gobbling up his favourite chocolate ice-cream. But I do allow him a tiny scoop or two for being such an ideal patient.



Uncle you are looking much better now.



What about your project 'Reaching Out'? Tanya has been keeping it a closely guarded secret.



We have got a wonderful response from the residents of the neighbourhood.



We have referred around twenty persons to the Diabetes clinic which Seema Didi was talking about.



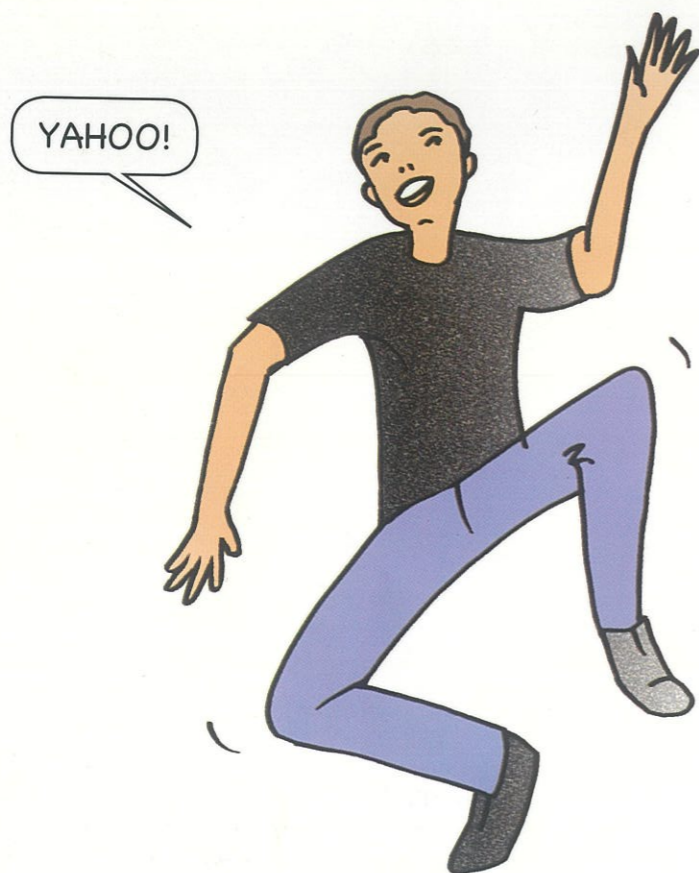
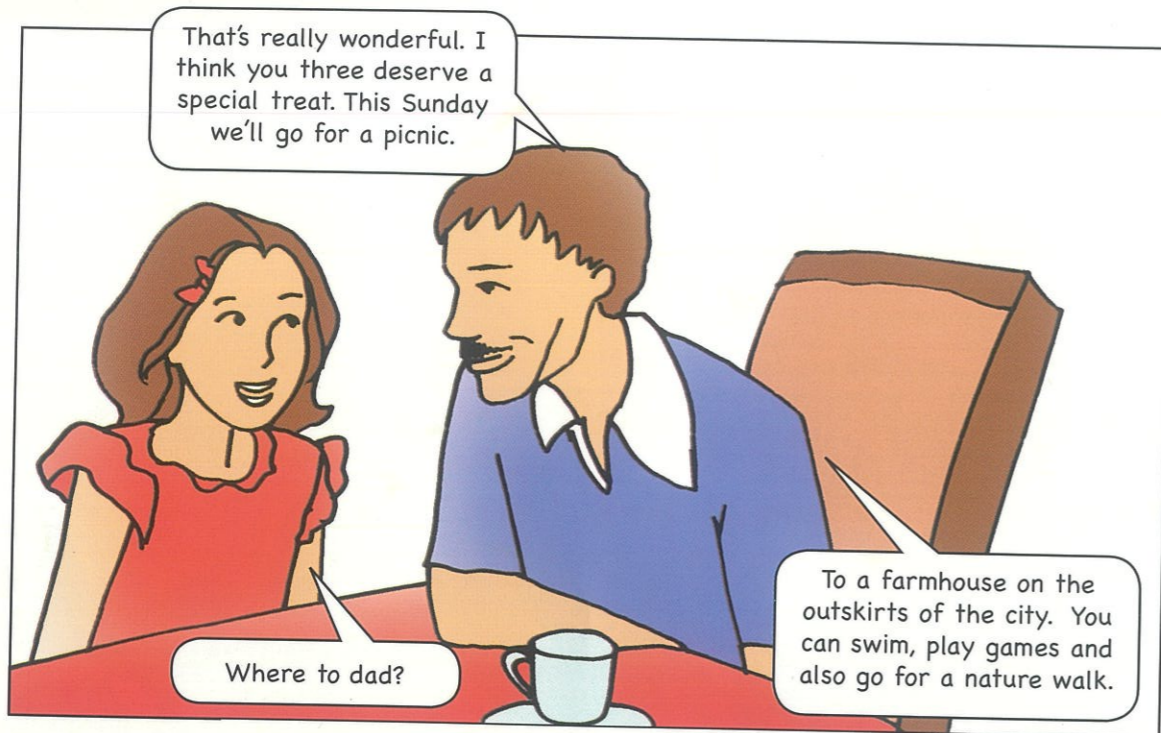
I think these guys are doing a wonderful job. Three of the patients were in quite a serious state and we had to admit them. The sad part was they had no idea they were suffering from diabetes.



Uncle, Aunty, our Principal has really liked the idea of 'Reaching Out' and has asked four groups to join us. Seema didi has educated them and since last week they have started visiting a few other neighbourhoods too.



And that's not all. The Principal has told our dramatics club teacher to organise street plays in various neighbourhoods and bastis. These plays will focus on the importance of health, hygiene as well as attempt to spread awareness about diseases like diabetes and hypertension.



QUESTIONS & ANSWERS

1. Who can be considered a diabetic?

A diabetic is a person with a fasting blood glucose of ≥ 126 and a blood glucose level after two hours of taking 75 gm sugar is > 200 mg %.

2. What are the causes of diabetes?

The causes of diabetes are:

- **Heredity:** It is strongly believed that due to some genes, which pass on from one generation to another, a person can inherit diabetes.
- **Age & gender:** Increased age is a factor. This disease may occur at any age, but 80% of cases occur after 50 years. Diabetes is more commonly seen in elderly males.
- **Poor Diet:** Improper nutrition, low protein and fiber intake, high intake of refined products are some of the reasons for developing diabetes.
- **Obesity and Fat Distribution:** An overweight or obese person is one who has a waist of >35 inches (for women) or >40 inches (for men) and a Body Mass Index (BMI) of >25 , which is calculated as weight (in Kg)/ square of height in metres. Increase in the number of fat cells, leads to resistance in the action of insulin produced by the body. Due to this resistance, insulin is not able to utilize glucose effectively.
- **Sedentary Lifestyle:** People with sedentary lifestyle are more prone to diabetes.
- **Stress:** Either physical injury or emotional disturbance is frequently blamed as the initial cause of the disease.
- **Drug Induced:** Some drugs are known to induce this lethal disease.
- **Infections:** Some streptococci are responsible for infections in the pancreas, which ultimately lead to diabetes.
- **Hypertension:** It had been reported in many studies that there is a direct relation between high systolic pressure and diabetes.
- **Serum lipids and lipoproteins:** High levels of bad fat (LDL and triglycerides) and cholesterol in the blood is related to high blood sugar. Similarly, lower levels of good fat (HDL) in the body are also associated with increased risk of diabetes.

3. What is Pre-Diabetes?

Pre-diabetes is more of a warning or an alert that if lifestyle changes do not occur such as increase in exercise, decrease in food portion sizes, management of weight, etc., the person

will eventually end up getting Type 2 diabetes. By changing to healthy habits and sticking to them, the person with pre-diabetes can usually prevent getting Type 2 diabetes or at least halt its progress for many years.

Do's and Don'ts:

1. Avoid soft drinks, sweeteners, fried items.
2. Eat plenty of fruits and vegetables.
3. Take green leafy vegetables regularly.
4. Avoid oil
5. Minimize the intake of red meat
6. Exercise regularly. Exercise for one hour or at least half an hour daily.
7. Avoid substance abuse
8. Do yoga regularly and, if possible, practice meditation.
4. How can diabetes be managed effectively?

DIET

- A well balanced diet is one that is high in fibre and unsaturated fats which are found in oily fish, nuts and seeds, avocados, olive oil and vegetable oils. These provide the essential fatty acids required to stay healthy. Harmful saturated fats found in foods such as sausages, butter, cakes, biscuits and pies raise the blood sugar and cholesterol levels.
- A consistent diet is one which includes roughly the same number of calories consumed at about the same times of the day.

EXERCISE:

Regular exercise, in any form, reduces the risk of developing complications of diabetes such as heart disease, stroke, kidney failure, blindness, and leg ulcers. We must remember that any exercise is beneficial; no matter how light or how long. Some exercise is better than no exercise at all.

SUBSTANCE ABUSE:

For a person suffering from diabetes, smoking cigarettes or using any other form of tobacco, raises the risk of nearly all the complications associated with diabetes. Smoking damages blood vessels and contributes to heart disease, stroke, and poor circulation in the limbs.

MONITORING:

Monitoring of blood sugar levels at regular intervals or as advised by the doctor, helps in managing diabetes.

NUTRIENT PLATTER



Calcium

Food Items: Milk and milk products

Potassium & Magnesium

Food Items: Cereals, nuts, dry fruits, broccoli, cabbage, sprouts, cauliflower

Protein

Food Items: Milk and dairy products, fish, legumes, meat, nuts, dry fruits

Iron

Food Items: Fish, cereals

Vitamin A

Food Items: Carrot, broccoli, sweet potato, spinach, pumpkin, cheddar cheese, egg, papaya, mango, apricot, peas, milk

Vitamin B

Food Items: Cereal, meat, liver, lentils, potatoes, banana, chilli pepper, whole grains, beans

Vitamin C

Food Items: Citrus fruits (orange, lemon, amla, sweetlime), broccoli

Vitamin E

Food Items: Nuts, dry fruits

Carotene

Food Items: Raw tomatoes, mango, papaya, dried apricots & peaches, broccoli, cabbage, cauliflower, leafy vegetables (spinach, methi), cooked tomatoes, carrots, sweet potato, pumpkin, onion and garlic

Butterflies is a child rights organisation. It reaches out to the most vulnerable urban poor children in Delhi. It also works in 4 islands of the Andaman and Nicobar post tsunami. With focus on education and developing their skills and capacities as respected citizens, children's participation is central to its programming. Butterflies partners with Delhi and Uttarakhand state governments in implementing Sarva Shiksha Abhiyan programme through mobile schools. Butterflies is constantly striving to find creative ways of promoting and protecting children's rights, especially of the most marginalized and vulnerable children, with emphasis on empowering children.

Acknowledgement

We would like to extend our thanks and deep gratitude to a few special persons without whom we would not have been able to publish this comic book.

Mr. Ramendra Kumar, (Dy. Manager (PR) & COC, Steel Authority of India Ltd), Orissa, for having written a story based on a topic as complicated as diabetes in a child friendly language.

Dr. Ambar Khaira, Nephrologist, (Consultant, Moolchand Hospital), New Delhi, for having read through the content, corrected and simplified it so that it could be easily understood.

Dr. Geeta Singh, Head (Advocacy, Research and Documentation), Butterflies, for research on the topic and concept paper.

Mr. Shashidhar Sabnavis, Head (Children's Development Khazana), Butterflies, for facilitating in getting this book published.

The inspiration for this book is Mr. Gerry Pinto, who spent most of his working life defending children's rights. He was a friend and Advisor of Butterflies.

- Published by Advocacy and Research Center, Butterflies - 2012

Illustrations by : Ritu Kamath

Design by : Dharana

Printing by : Bright Design Focus



Programme with street and working children

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