

RENATA,

my nephrologist

TEACHING UNIT



3rd–4th grade (Primary School)

INTRODUCTION

Kidney disease can go unnoticed for a long time, since the kidneys do not hurt. That's why it is sometimes detected too late.

The good news is that with timely information and by steering clear of the risk factors, it can be prevented.

There's no better time than childhood to learn about it! It is true that kidney disease affects older people more, but it is also true that it results from the lifestyle habits we have had since we were young. That's why it's so important to start prevention early

We want children to know from an early age how they can live in a healthy way and what they should do to take care of themselves and protect their kidneys.

Once they understand, we'll talk to them and empower them to share this knowledge with society.

CONTENTS

- What the kidneys are and what function they perform
- How the kidneys work
- Prevention and symptoms of kidney disease
- Classification of foods
- The importance of drinking water
- Recognizing a healthy lifestyle as a means of preventing illness
- Organ donation and transplantation

TEACHING OBJECTIVES

- To understand the function of the kidneys and kidney diseases
- To understand how the kidneys work
- To become aware of how to prevent kidney diseases
- To know what type of diet should be followed to maintain healthy kidneys
- To know that water is essential for the kidneys
- To be aware that practicing sports daily also helps us maintain healthy kidneys
- To learn about some of the treatments that can be used in kidney disease
- To become aware of the importance of organ donation

COMPETENCIES

- Linguistic communication competence
- Artistic and cultural competence
- Information processing and digital competence
- Learning to learn competence
- Personal autonomy and initiative competence
- Knowledge and interaction with the physical world competence
- Social and civic competence

ASSESSMENT CRITERIA

- Understands what the kidneys are and how they function
- Is able to list good guidelines to follow to take care of healthy kidneys
- Knows some of the treatments for kidney disease
- Understands what organ donation is and recognizes the importance of this act

1

ACTIVITY: WHO IS RENATA?

Material

- Book "Renata, my Nephrologist" and activity sheets

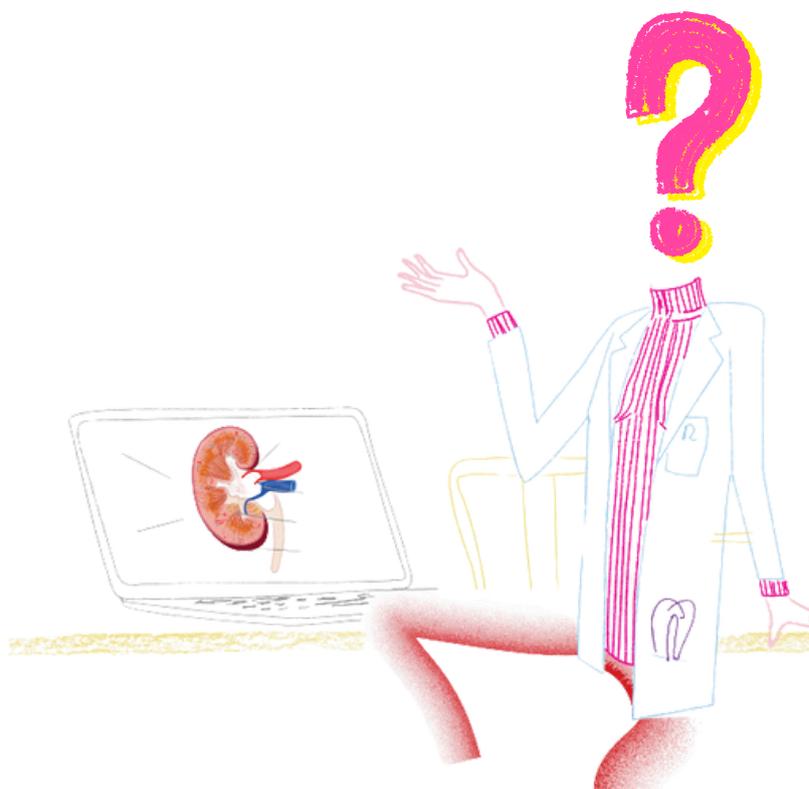
Read the book Renata, my Nephrologist together, followed by a brief discussion with the students.

In groups of 4–5, complete the exercises on Activity Sheet 1 – crossword, word search, and hangman

Cut-out card game to be played in teams of 4–5 students (Activity Sheet 2)

Cut out the 6 cards of the 6 characters from Renata, my Nephrologist. Once cut out, each person in the team takes one card that only he/she can see.

The rest of the team may ask 5 Yes/No questions to guess which character it is.



2

ACTIVITY: HOW DO OUR KIDNEYS WORK?

Material

- 2 transparent containers, a funnel, cotton, a strainer, sand, and water.

EXPERIMENT TO UNDERSTAND HOW OUR KIDNEYS WORK

Preparation

Students will form groups of 4–5 people, and using the materials listed above, they will create two types of “kidneys”:

1. A strainer placed over a container.
2. A funnel with cotton placed over another container.

Ask the students:

Which of the two kidneys do you think will filter the water better?

Possible answers:

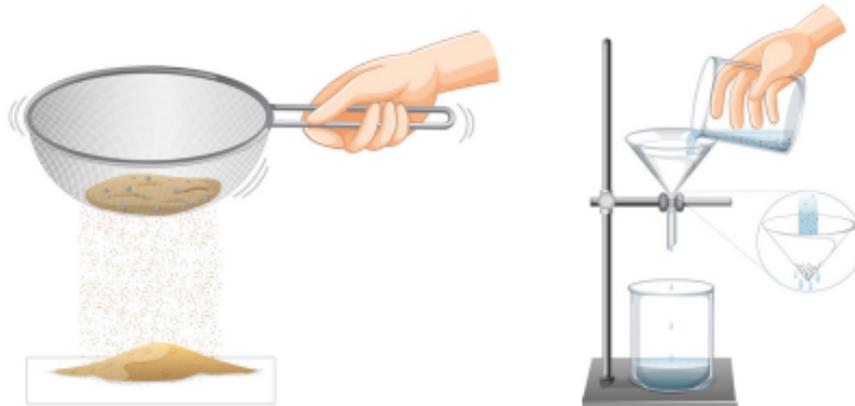
- Kidney 1 because the strainer has very small holes and will not let the sand pass through.
- Kidney 2 because the sand will stay on top of the cotton.

Each group must agree on an answer and explain the reasoning behind their choice.

Check it out:

1. Put sand in a jar and mix it with water (making cloudy water).
2. Pour the cloudy water into each of the “kidneys.”
3. Observe what happens. Which water looks cleaner?





Conclusion

Kidney number 2 filters the water best. Healthy kidneys work in a similar way to the cotton: they filter the blood and remove waste.

Ask the students:

- In this case, what would the sand represent? (Creatinine)
- What happened in kidney 1? (The kidney is not working well and has not removed the creatinine)

What can we do to keep our kidneys healthy?

Martina explains what we should do to maintain healthy kidneys:

1. Eat healthy and natural foods
2. Do sports and drink water
3. Do not eat too much salt
4. Be careful with medications

It's important to be aware that if we experience any of these symptoms, we should report them:

1. Chest pain
2. Dry skin
3. Itching
4. Excessive tiredness
5. Headache
6. Increase or decrease in urination
7. Loss of appetite
8. Muscle spasms

3

ACTIVITY: THE HEALTHY PLATE GAME

Material

- Cards with drawings of different foods.

Preparation

- Place the cards face down in a pile in the center of the table. Each player has 4 sheets with the four meals of the day: breakfast, lunch, afternoon snack, and dinner.
- The lunch and dinner plates are divided into four sections: the largest quarter is for vegetables, the smallest for fruit, and the other two for protein and carbohydrates. The breakfast and snack plates do not have this division. This allows for greater freedom and creativity; however, it must not be forgotten that the meals must be healthy, and each one must include at least one piece of fruit and one source of protein.

How to play

The first player draws a card from the pile in the center. If it is a healthy food, the player must identify whether it is a vegetable, fruit, protein, or carbohydrate, and then place it on the appropriate plate and in the correct section.

If the card shows an unhealthy food, it must be discarded. Cards showing foods that are healthy but no longer needed are also discarded—for example, if all four plates already have fruit and the player draws another fruit card, it must be discarded.

The turn passes to the player on the right, who draws a card and follows the same procedure. The game continues until one player completes all four healthy plates. All four plates must be accompanied by water (not soda!).

Physical activity helps maintain better kidney health. People who exercise regularly have better kidney function, so let's get running while we review some of the basic concepts we have learned...

4

ACTIVITY: THE SECRET WORD

Material

- Sheets with letters to form the secret words.

How to play

Students will form teams of 4–5, standing in a line one behind another. Before starting, the teacher will ask a question such as:

“What is the waste in the blood that the kidneys must eliminate?”

After the question is asked, the first student runs to the place where the letter cards are and picks one that belongs to the secret word. Once they return, the second student may run (a relay), and so on, until one of the teams completes the secret word – in this case, [creatinine](#).

- What are the organs responsible for cleaning the blood? [Kidneys](#)
- What is the name of the kidney doctor? [Nephrologist](#)
- What is the waste in the blood that the kidneys must eliminate? [Creatinine](#)
- What are we doing right now that helps prevent kidney disease? [Exercise](#)
- What is the liquid that the kidney likes most? [Water](#)
- What is it called when a third kidney is placed in someone? [Transplant](#)

5**ACTIVITY:
ORGAN DONATION****Material**

- Computers/tablets to search for information, poster board and materials to create posters, and a video camera/tablets to record the awareness message.

Brief introduction and explanation of organ donation and transplants

Information gathering. In groups of 4–5 students, they will be asked to search for information and ask their families about:

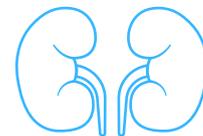
- What organs can be donated?
- When and who can donate organs?
- What must you do to become a donor?
- What types of donors exist?
- Do all organs work for all people?
- Do you know any donors? And any transplanted persons? (Can they share their experience?)

CAMPAIGN IN FAVOR OF ORGAN DONATION

Once all this information has been gathered, students will be asked to create an awareness campaign about organ donation.

To carry out the campaign, each group must create:

- A slogan
- A poster for dissemination
- A one-minute video to raise awareness among the population about the importance of organ donation



Once all the groups have created their campaign, they will present it to the rest of the class, giving a brief explanation of how and why they created it. After all campaigns have been presented, the students will vote for the winning campaign.

It is suggested that all the posters be displayed in the school so the message reaches other students, teachers, and staff, and that the videos be posted on the school's digital platforms.