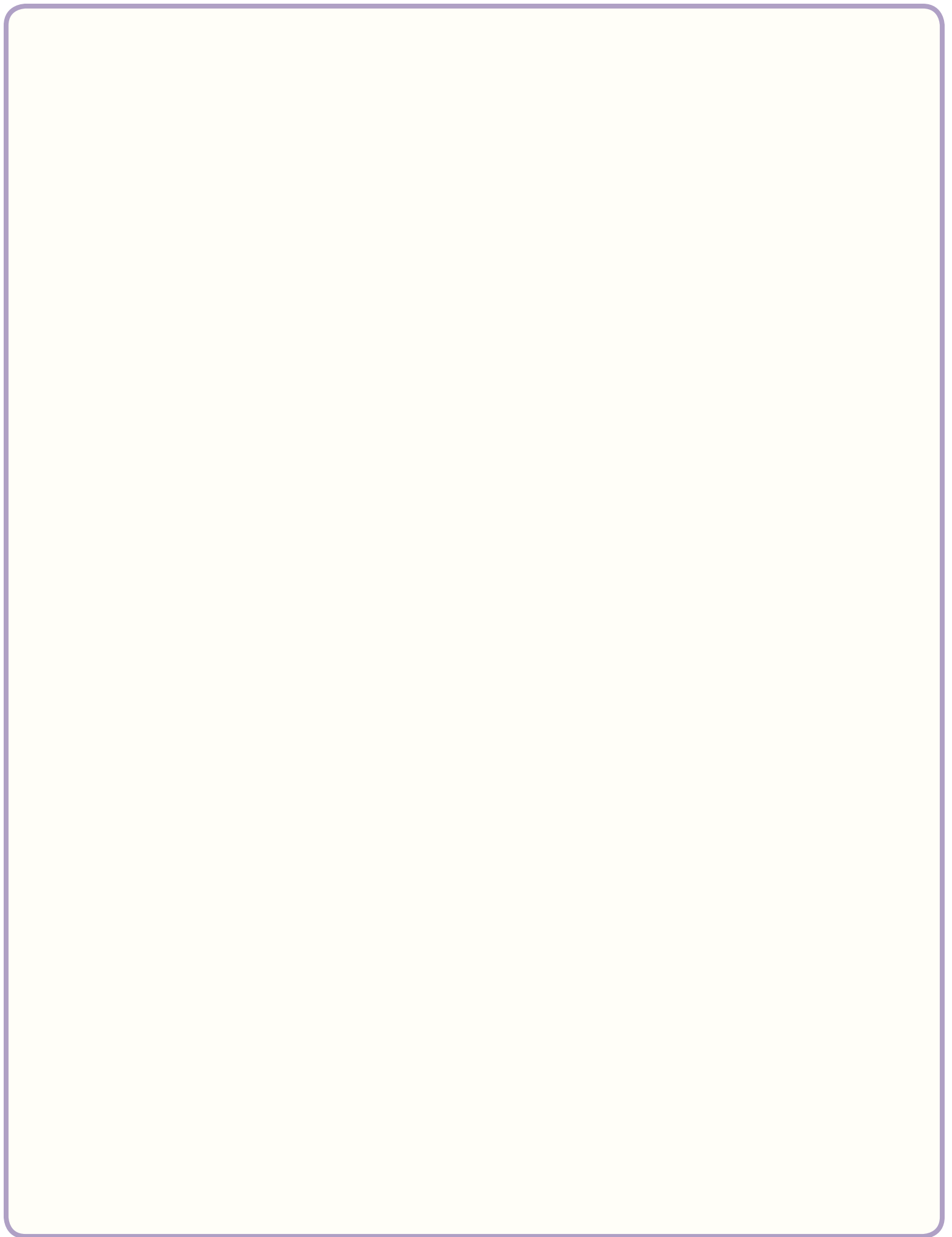


ACID BALANCE

FACILITATOR RESOURCE



NOTES

RESOURCES MENU

1. Your Kidney Health Team
2. Meet Your Kidneys!
3. Balance
4. Connections
5. Healthy Eating
6. Being Active
7. Taking Medicines
8. Healthy Blood
9. Bone Health
10. Blood Pressure

11. ACID BALANCE

12. Growth
13. Chronic Kidney Disease
14. Family Coping Resources
15. My Coping Resources
16. Glossary

PRE-SCHOOL LEVEL



SCHOOL AGE LEVEL



ADOLESCENT LEVEL



11. GLOBAL LEARNING OBJECTIVES

By the end of this session, the children and their family will be able to understand they need the right amount of acid in the body to be healthy

KIDNEY HEALTH MODULES DESIGN OVERVIEW

This material was compiled and designed to meet the needs of the diverse children, their families, caregivers and the health care providers who will be facilitating learning about how to live well with chronic kidney disease.

The design incorporates findings from research on providing health education information to children and adults. A number of families agreed to allow the consultant observe their appointments and interview them about learning about and managing their or their child's chronic kidney disease. In addition, health care providers received a questionnaire and were interviewed about their priorities for children and families in order to manage CKD effectively.

To determine initial topic areas, children and families were asked what was most important to know and most important to be able to do to manage their disease well. The Project Team considered what is required to manage CKD well from their perspective. From this information, topics were grouped into the resulting 16 topic areas. Certainly, for parents and children, "being able to do" things to manage CKD took priority over understanding so much about the disease.

Once the topic areas were determined, the consultant worked with pediatric nephrology health care providers to determine learning objectives for the 3 developmental stages and parents and caregivers.

Using plain language principles and best practices for developmental stage learning design, modules were designed to guide learners towards achieving the learning objectives.

Each module begins with an overview of all learning objectives. The learning objectives are informed by the Key Messages and Clinical Targets which are supported by Resource Materials for the facilitator for each module.

Each section of the module begins with reminders about your approach, appropriate for each developmental level. There is ample white space for you to write your own notes and ideas for delivery.

The Parent and Caregiver Resource provides highlights of the concepts and terms for each module as well as the full glossary for that module. There is also a listing of relevant online and library-available resources.

FACILITATING LEARNING

Facilitating learning puts the emphasis on the learners and their interests and abilities rather than on an outside entity. How does this affect what you, as the healthcare provider, do?

- Work with people where they are at.
- If families are not ready to make a change, they do not need to sit through the presentation of materials. You may want to just give the Activity Sheet to these people. Or you may wish to start a conversation about what the Kidney Health Team can do to help the family feel they are ready to make some changes.
- Use Motivational Interviewing techniques.
- Be careful not to ask for more than one change at a time.
- Not everyone will be able to understand or use the information in the same way. You may find yourself revisiting modules with some children and families repeatedly while others will go away and look into things on their own.
- You will be helping people learn how to manage the disease rather than learn about the disease and understand why the doctor or healthcare team is recommending certain types of management.

Connecting and Relating Learning

A key premise of this work is interconnections. As a facilitator, find ways of linking concepts and tools throughout the modules. As much as possible, concepts are built upon throughout the modules. For instance, in Connections we begin to talk about heart health and kidneys. In Blood Pressure, we build upon that knowledge and introduce the concept of perfusion.

Applying information

Encourage children and families to refer back to information and use the concepts and terms presented. Make sure they are holding the “story books” flipping through them and back and forth in a way that makes sense to them. The concepts and information designed are age-appropriate, clinically and medically accurate and meant to be applied. The Activity Sheets are designed for use people at all levels to reinforce vocabulary and concepts.

Visual Learning

The vast majority of people are visual learners rather than auditory learners. Interesting graphics that tell a story are a more effective way for many people to learn than either listening to information on its own or reading dense information. You will notice that the glossary terms are supported through graphics linked to concepts introduced in the modules.

Literacy Levels

In Manitoba, 40% of working adults have low literacy levels. Give people time. Let them contemplate the graphics. Keep your language plain.

RESEARCH KEY FINDINGS

Developmental Stages and Learning Design Key Points

- Importance of play in learning and education for all levels.
- School-age: time to create and reinforce healthy rituals.
- Adolescence: begin to share consequences but limited.
- Delivery of learning is key: recommendation to embrace motivational interviewing as intervention approach.
- Use of transtheoretical / stages of change model.
- HCP as facilitator of learning.

Child / Parent Consultations Summary Key Points

- The “how” needs to come before the “why” in educating. Some patients and families may never get to the “why.”
- Global approach to living healthily and move towards the rationale.
- The lived experience is how we need to think about the learning and educating.
- Appreciation for visual cues and teaching aids.
- Need for useable, family-friendly diet information:
 - shopping lists and pantry list.
 - meal plans for breakfasts, lunches, dinners, snacks that are kidney health friendly and will work for whole family.
- Patients and families do and want to learn from each other.
- Value in emailing nurse clinician.

Best Practices for Health Education Summary Key Points

- Emphasis on action-oriented teaching: what people need to do and how to do it.
- Put positive in front of negative: provide hope rather than feed despair.
- Use simple pictures and graphics to display proportions.
- Plain language is not “dumbed down”: it is simply clear.

For more information, contact any member of the Kidney Health Advisory Group:

Angela Chotka, MA

Julie Strong, BN

Tom Blydt-Hansen, MD

Diane McKenty, RN

DEVELOPMENTAL LEVEL OBJECTIVES

By the end of this session:

The Pre-School Age Child will be able to:

- a) know that the Kidney Twins like our bodies to have balance
- b) know there are different ways we balance
- c) know that achieving balance can be difficult

Possible activities include:**The Adolescent will be able to:**

- a) understand that the normal amount of acid in the body promotes strong bones, good growth and feeling well
- b) know that metabolic acidosis is the term for having too much acid in your body

Possible activities include:**The School Age Child will be able to:**

- a) know that there is a right amount of acid for your body to be in balance
- b) know that a blood test checks acid levels
- c) understand that food choices can be made to adjust the amount of acid in your body
- d) understand that medicine is sometimes needed help you have the right amount of acid /in your body to keep you healthy

Possible activities include:**The Parents and Caregivers will:**

- a) provide healthy nutritious food
- b) supervise taking medications required
- c) access ways to cope with giving child unpleasant medications to help their child get the right amount of acid in the body

KEY MESSAGES

1. Normal acid-base balance is critical to health. Imbalance results from kidney disease either due to low filtration capacity (decreased GFR) or tubular dysfunction. The nature of the acid-base imbalance will depend on the type of kidney disease.
2. Metabolic acidosis is the term used to describe excess acid. Acidemia is the term used to describe the level of acid in the blood, and is measured by the pH test. We will emphasize the concept of keeping acid in the right balance.
3. Control of metabolic acidosis is important to address the following issues: Growth delay, failure to thrive, bone mineral disease, and CKD progression.
4. Some foods are high in alkali and may be used to partially control acidosis, depending on other diet restrictions.
5. Medications are used to control metabolic acidosis, such as NaHCO_3 tablets and Na dicitrate liquid formulations. CaCO_3 that is used for phosphate-binding, is also a source of alkali supplement.
6. Blood gas testing (usually capillary) is used to monitor acid/base disease. TCO_2 testing of routine biochemistry is often used to screen for acidosis, but blood gas is required to confirm the level of control.
7. Metabolic acidosis is progressive - the risk of acidosis and need for medication increases with advanced stages of CKD.
8. The proximal kidney is responsible for reabsorbing the filtered load of bicarbonate that is in blood. The distal kidney (collecting tubules) is responsible for regenerating bicarbonate that is used up in buffering the acid in our diets. Malnutrition and other disease states can also impair the kidneys ability to excrete all of the acid required to maintain normal balance.
9. In severe metabolic acidosis, there are some physical symptoms (e.g. hyperventilation and nausea), but in general, acidosis does not result in specific signs or symptoms. As a result, blood test monitoring is essential for diagnosis.
10. Identification of growth delay or mineral bone disease should always prompt assessment of acid/base control.

TARGETS FOR FACILITATORS TO BE AWARE OF

1. The KDOQI guidelines prescribe specific targets for regulating acidosis, which is the assessment of acidemia (pH) and level of HCO_3 .
2. The dietitian may be consulted to provide additional detail on diet enhancements specific to improving alkali intake (for motivated families), in context of other diet restrictions.
3. Growth is assessed by plotting height and growth velocity.
4. Bone mineral disease is staged by x-ray imaging.

PRE-SCHOOL LEARNING

1. PRE-SCHOOL LEVEL

11. ACID BALANCE



RESOURCES MENU

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16. Glossary

MY APPROACH

1. Where is this family at? (Stages of Change)
2. Acknowledge what children do or say.
3. Model attitudes, ways of approaching problems and behaviours towards others rather than telling them.
4. Ask questions to provoke thinking; describe pictures.
5. Provide hints to assist children when they are struggling with concepts.
6. Offer a variety of choices when children are trying to find the answer.
7. While your time is limited, try to give children and family time to think about the material and messages.

PRE-SCHOOL LEARNING OBJECTIVES

Remember ... children can use words and images to represent objects but are not yet reasoning logically.

The Pre-School Age Child will be able to:

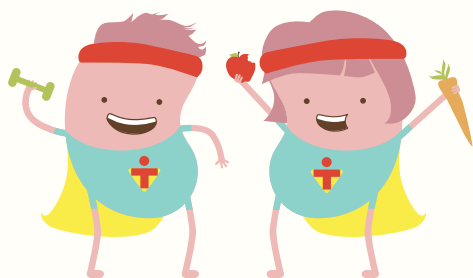
- a) know that the Kidney Twins like our bodies to have balance
- b) know there are different ways we balance
- c) know that achieving balance can be difficult

Possible activities include:

LEARNING SUPPORTS

Have you got the Learning Supports you might want to use?

1



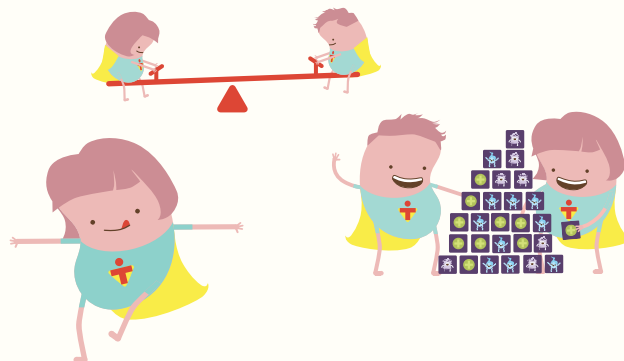
The Kidney Twins like us to have **balance**.

1. Today we are going to talk about the kidneys balancing again.

Do you remember that the Kidney Twins balance many things in our bodies?

2

What are the different ways we balance?

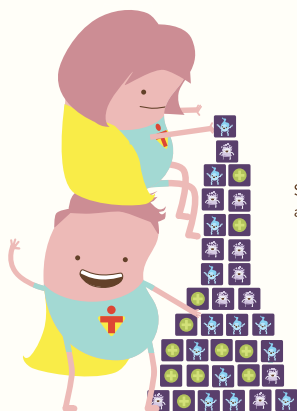


2. Can you think of different ways to balance?

- standing on one leg
- on a see-saw / teeter totter
- building a tower

We need the right balance of acid for our Body Team to be healthy and strong.

3



Sometimes balancing is hard. The Kidney Twins are really good at keeping things in balance.

3. Sometimes balancing is hard.

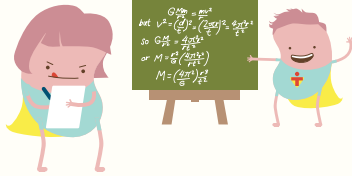
The right amount of acid helps us grow well, helps us feel good and helps us think well.

UP NEXT: SCHOOL AGE LEVEL

SCHOOL AGE LEARNING

2. SCHOOL AGE LEVEL

11. ACID BALANCE



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MY APPROACH

1. Where is this family at? (Stages of Change)
2. Acknowledge what children do or say.
3. Model attitudes, ways of approaching problems and behaviours towards others rather than telling them.
4. Provide information, directly giving children facts, labels and other information.
5. Ask questions to provoke thinking; ask children to describe pictures.
6. Provide hints to assist children when they are struggling with concepts.
7. Offer a variety of choices when children are trying to find the answer.
8. While your time is limited, try to give children and family time to think about the material and messages.

SCHOOL AGE LEARNING OBJECTIVES

Remember ... children can think logically about concrete objects and can apply rules in a consistent way.

The School Age Child will be able to:

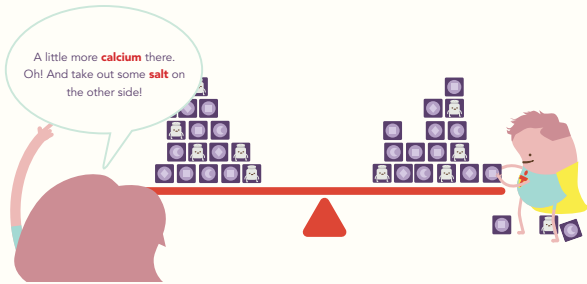
- a) know that there is a right amount of acid for your body to be in balance
- b) know that a blood test checks acid levels
- c) understand that food choices can be made to adjust the amount of acid in your body
- d) understand that medicine is sometimes needed help you have the right amount of acid /in your body to keep you healthy

Possible activities include:

LEARNING SUPPORTS

Have you got the Learning Supports you might want to use?

1



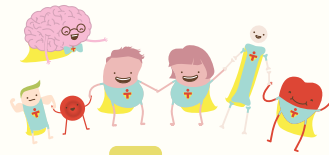
The Kidney Twins are all about **balance!** They balance many things in our bodies.

1. What does it look like the Kidney Twins are doing in this picture?

(Balancing)

Do you remember that the Kidney Twins balance many things in our bodies?

2



We need the right amount of **acid** in our body for a healthy **Body Team**. The Body Team helps us grow.

2. If the kidneys are not working well, they cannot balance the acid in our bodies.

We need the kidneys to balance acid so that the whole Body Team feels good and helps you grow!

3

Where does our body get acid?



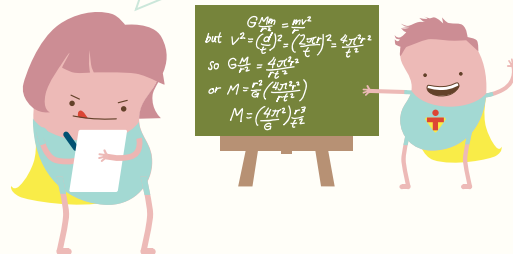
...in our food!

3. Look at this picture. Can you guess how our body gets acid?

Yes, from our food!

4

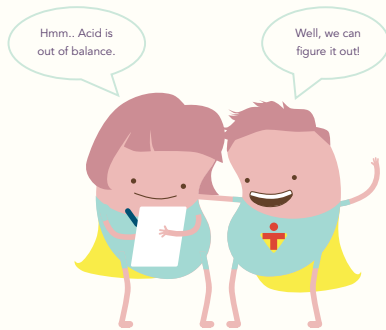
Yes! That's the right amount.



Who makes sure we have the right amount of acid in our body?

4. Can you guess who makes sure we have the right amount of acid in our body?

5

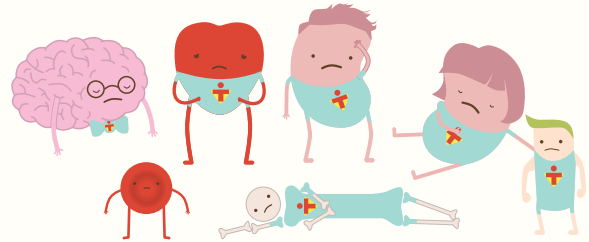


Kidney Twins help out again!

5. Yes, it's the Kidney Twins helping again!

6

When the Kidney Twins can't balance the acid in your body, everyone feels sick.



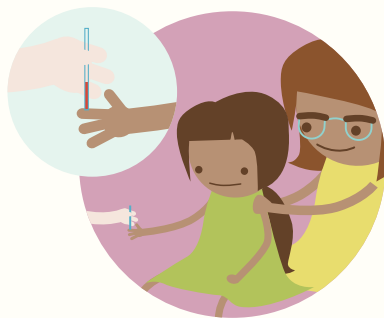
6. Sometimes, the Kidney Twins cannot keep the right balance of acid.

Look at the Body Team in this picture. How do they look?

All of the body team feels sick if we do not have the right amount of acid in our bodies.

How do we know if you have the right amount of acid in your body?

7



The **Kidney Health Team** checks the acid in your body with a **blood test**.

7. We test the amount of acid in your body with a blood test.

8

There are foods to eat when you have too much acid in your body.



8. When we have too much acid in our body, we can eat some foods that help.

These are foods that are good for helping if you have too much acid in your body.

Sometimes though, we need more help.

9

Sometimes the Kidney Twins need more help to get the right amount of acid in your body. There is **medicine** to keep the Body Team healthy!



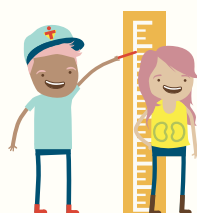
9. If the Kidney Twins cannot keep the right balance of acid, you will have to take some medicine.

UP NEXT: ADOLESCENT LEVEL

ADOLESCENT LEARNING

3. ADOLESCENT LEVEL

11. ACID BALANCE



RESOURCES MENU

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ADOLESCENT LEARNING OBJECTIVES

Remember ... many adolescents can reason abstractly and think in hypothetical terms

The Adolescent will be able to:

- a) understand that the normal amount of acid in the body promotes strong bones, good growth and feeling well
- b) know that metabolic acidosis is the term for having too much acid in your body

Possible activities include:

MY APPROACH

1. Where is this family at? (Stages of Change)
2. Acknowledge what the adolescents say and do.
3. Model attitudes, ways of approaching problems and behaviours towards others rather than telling them.
4. Ask questions to provoke thinking; describe pictures.
5. Guide, do not dictate. Youth want info so they can make their own decisions.
6. Be patient. Don't be discouraged if your first offers of support are turned down.
7. Give opportunities to use strategic thinking, reasoning and problem solving.
8. Let them do some evaluation and monitoring of their understanding.
9. While your time is limited, try not to give children and family time to think about the material and messages.

LEARNING SUPPORTS

Have you got the Learning Supports you might want to use? Copy of activity sheet

1

Do you remember talking about **balance** and the **kidneys**?

Oh yeah, our kidneys balance the **Building Blocks** for our body. They balance **salt, water, protein, and minerals** – and get rid of **waste**.

Well, there's one more: the kidneys know the right amount of **acid** for our body and they keep that balance too.

1. Today we are going to talk the right amount of acid in our body.

Do you remember that the kidneys keep many things in balance? The kidneys know the balance we need to be healthy.

There's something else that the kidneys balance: acid levels.

Optional Learning: the kidneys balance salt, water, protein, waste, minerals, blood.

2

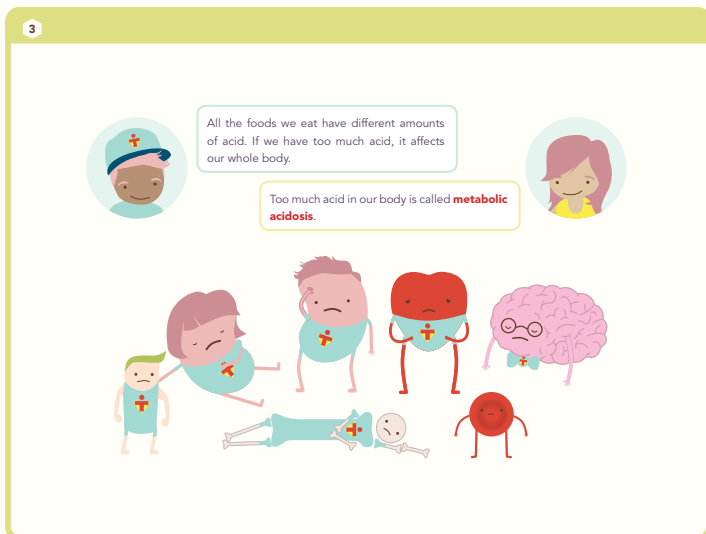
Let me guess: we need the right amount of acid in our body so that we are healthy?

Right! And to help us grow.

2. We need the right amount of acid in our body. The right amount of acid affects our whole Body Team ... the heart, the brain, bone, blood.

Can you guess why it's important to have the right amount of acid in your body?

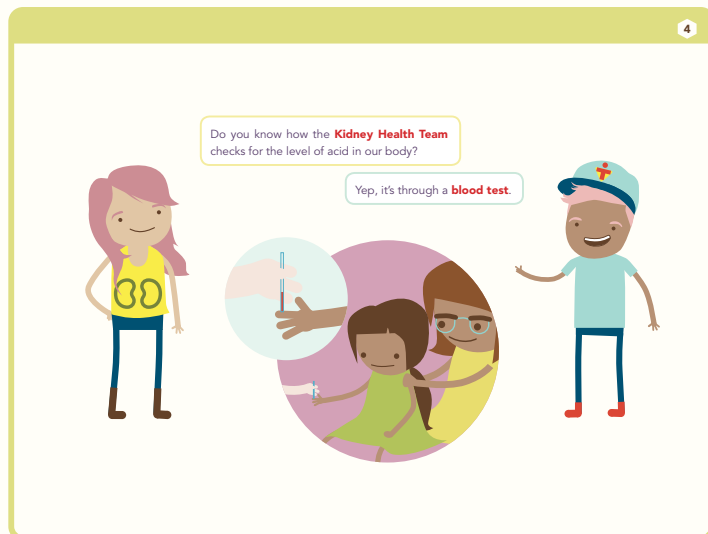
Having the right amount of acid helps you grow well.



3. We get acid from foods we eat. All foods have different amounts of acid and it is the kidneys' job to make sure we have the right amount of acid.

If we have too much acid in our body we feel sick. Our whole "Body Team" is affected.

The medical term we use for having too much acid in the body is called: metabolic acidosis.



4. We can check the level of acid in your system – in your body – through a blood test.

We check your acid levels regularly to help you stay healthy.

5



So, we get acid in all the food we eat. Are there different foods with less acid to help our body when we have too much acid?



Absolutely! We can eat foods like apples, broccoli, green peas and spinach. Check out the list below!

Alfalfa	Chard Greens	Greens	Apple	Grapes	Peach
Beet Greens	Cucumber	Peas	Apricot	Grapefruit	Pear
Beets	Cucumber	Peppers	Avocado	Honeydew	Pineapple
Broccoli	Green Beans	Pumpkin	Berries	Melon	Raspberries
Cabbage	Green Peas	Spinach	Blackberries	Lemon	Strawberries
Carrot	Kale	Sprouts	Cantaloupe	Lime	Tomato
Cauliflower	Lettuce	Tomatoes	Dates, dried	Nectarine	Plums
Celery	Mushrooms	Watercress	Figs, dried	Orange	Watermelon

5. We can help our bodies by eating certain foods that are lower acid.

* **Facilitators Note:** Use foods listed to probe foods adolescent knows and likes to eat.

6

FACT: metabolic acidosis
=
too much acid in the body

Sometimes, if we have metabolic acidosis, we need to take **medicines** to help get back into balance.

What kind of medicine will help me?



6. If you have metabolic acidosis – or too much acid – you might need to take medicines.

Let's talk a little bit about the medicine you might need.

7

Sodium Bicarbonate which is sometimes called "**bicarb.**" The medicines can be liquids or **pills**.

This medicine helps balance out the acid in our body.

The illustration shows a pharmacist in a blue cap and a patient in a yellow shirt with the number 30. To the right, there is a pill bottle with two pills, a green liquid bottle, and a white measuring cup.

7. There are two forms of this medicine:

The medicine can be in a pill which we call bi-carb. The full name is bi-carbonate.

There is also a liquid form of this medicine which we call dicitrate.

8

The right acid balance helps us grow.

So it's important to take these medicines to help my body have the right acid balance?

You got it.

The illustration shows a pharmacist in a blue cap and a patient in a yellow shirt with the number 30. They are standing and talking.

8. Do you remember talking about growth? (Growth Module)

The right amount of acid is related to how we grow. The right amount of acid helps us grow well.

There are a few things we want you to let us know about.



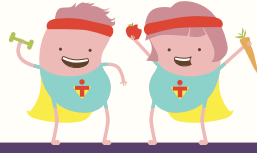
9. Some of these things you notice may be side effects from medicines.

Other symptoms may be because of metabolic acidosis or having too much acid in your body.

If you notice any of these things, you should contact your Kidney Health Team.

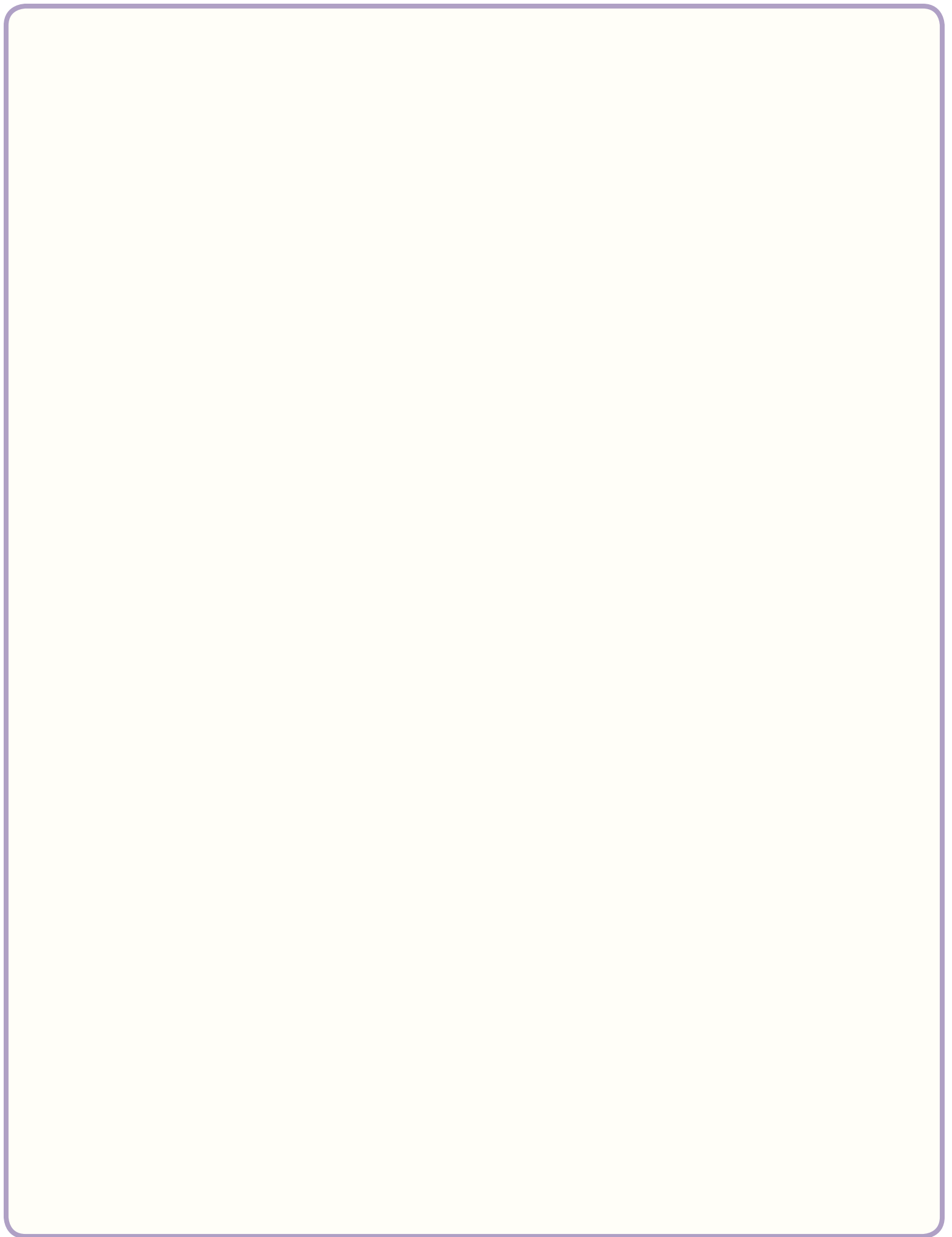
The kidneys keep the right amount of acid in your body.

Review Parent and Caregiver Resource.



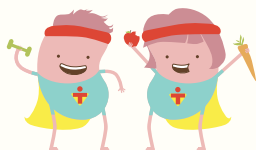
ADDITIONAL NOTES

A large, empty rectangular area with a light pink background, intended for additional notes or information.





HEALTHY KIDNEYS



Created by Julie Strong BN, Tom Blydt-Hansen MD, Diane McKenty RN, and Angela Chotka MA with Pediatric Nephrology (Children's Hospital Health Sciences Centre) and Chotka Consulting: Creative Balanced Solutions. With thanks to the Children's Hospital Foundation of Manitoba for their generous support.

For more information about this resource, please contact Pediatric Nephrology at 204-787-4947 or jstrong@exchange.hsc.mb.ca or the Children's Hospital Foundation of Manitoba <http://goodbear.mb.ca>