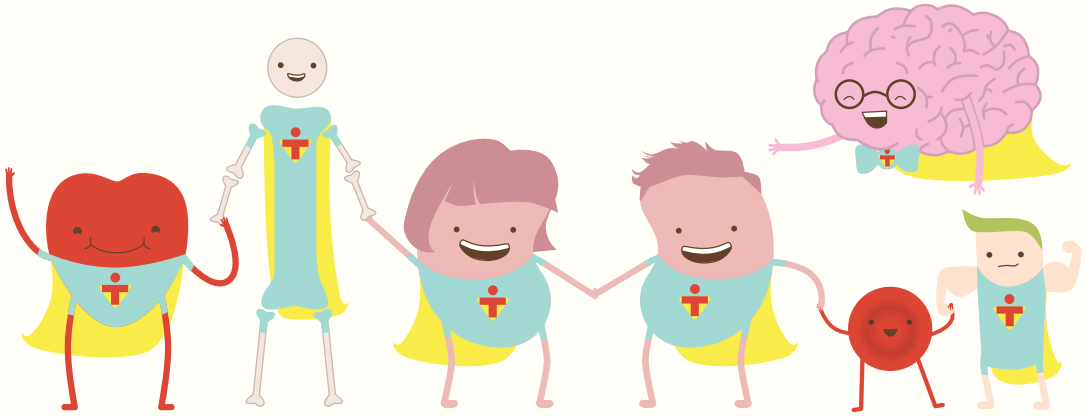


CONNECTIONS

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

4. GLOBAL LEARNING OBJECTIVES

By the end of this session, the children and their family will be able to name key functions of the kidneys and begin to understand that kidneys are linked to other systems in the body.

Supports: Diagrams or models in each appointment room

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 know that:

a) kidneys talk to other body parts to keep you healthy
b) help other body parts to do their jobs

Possible activities include:

The School Age Child will review that your kidneys:

a) recycle building blocks your body needs
b) get rid of things you body does not need

Know that your kidneys help keep:

c) your energy up
d) your bones strong
e) your heart healthy

Possible activities include:

The Adolescent will review that your kidneys keep:

a) balance in your body

Know that your kidneys help keep:

b) your energy up (have a role in making more strong blood)
c) your bones strong (have a role in vitamin metabolism)
d) your heart healthy (have a role in blood pressure)

Possible activities include:

The Parents and Caregivers will be able to:

a) review understand Adolescent objectives

KEY MESSAGES

1. Heart health is significantly linked to kidney function and overall health. In particular, kidney health can be linked to healthy heart, circulation, bones, metabolism and nutrition.
2. We can measure the health of the heart by doing tests such as echo and EKG. Regulating sodium balance and BP is one of the ways kidneys influence heart health. They also regulate the amount of water in the body, adjusted for the amount of sodium. The kidneys produce renin and aldosterone to aid in the balance of blood pressure – we can monitor blood pressure by doing tests such as ambulatory BP monitoring and casual (resting) BP monitoring – for more information see module on BP.
3. Some electrolytes like potassium are important for the electrical currents that work in the body, like muscle and heart health. The kidneys regulate the levels of potassium and acid in your blood to maintain an optimal level for heart and muscle conduction.
4. Red blood cell count contributes to energy level, heart health and growth. The kidneys produce erythropoietin to regulate red blood cell levels – we can measure haemoglobin to tell the amount of red blood cells and reticulocytes to tell the number of new red blood cells in a CBC. For more information see Healthy Blood module.
5. Bone and mineral health has an impact on growth, bone density and heart disease, and is regulated by the kidneys. The kidneys activate vitamin D to help with the absorption of calcium and maintain normal calcium / phosphate balance in the blood keeping the bones strong. It also regulates PTH, which is affected also by serum calcium and phosphate levels – for more information see module on bone health.
6. The accumulation of waste products in the body is referred to as “uremia” and results in general malaise, nausea, loss of appetite, poor nutrition and increased metabolic requirements for growth. We aim to alleviate or prevent symptoms of uremia by delaying or preventing progression of kidney disease (failure). The kidneys rid the body of waste products– we can monitor how effectively the kidneys are “cleaning the blood” with blood and urine tests and measured GFR tests.

TARGETS FOR FACILITATORS TO BE AWARE OF

1. EKG is used to identify abnormal rhythm (eg – peaked T waves -K related).
2. Echocardiography is used to identify left ventricular hypertrophy.
3. Normal parameters for BP based on Ht/Wt/Age and Gender –there are different parameters for 24 hour monitoring vs casual (resting) BP testing.
4. The KDOQI guidelines suggest specific targets for regulating anemia:
   - Hemoglobin
   - Iron
   - Total iron binding capacity (% iron saturation)
   - Ferritin
5. The KDOQI guidelines suggest specific targets for regulating bone & mineral health, according to age and the level of CKD:
   - Calcium
   - Phosphate
   - Product of calcium and phosphate (Ca x P product)
   - Parathyroid hormone
   - Vitamin D25
6. There is a test to measure GFR.
7. There is an equation for estimating GFR (glomerular filtration rate) (Schwartz equation).
8. Normal levels of urine albumin (usually as albumin/creatinine ratio).
9. There are targets for normal levels of critical blood minerals.
10. There are normal parameters of urea, creatinine, electrolytes and bicarbonate (acid).

PRE-SCHOOL LEARNING

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 know that:

a) kidneys talk to other body parts to keep you healthy
b) help other body parts to do their jobs

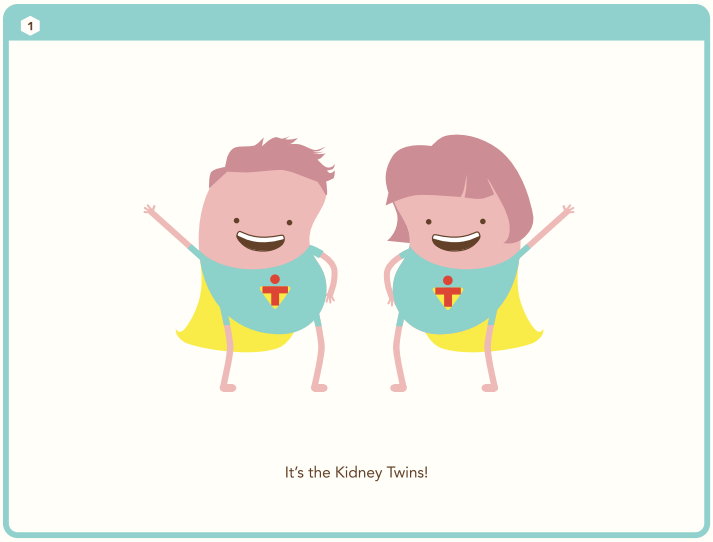
Possible activities include:

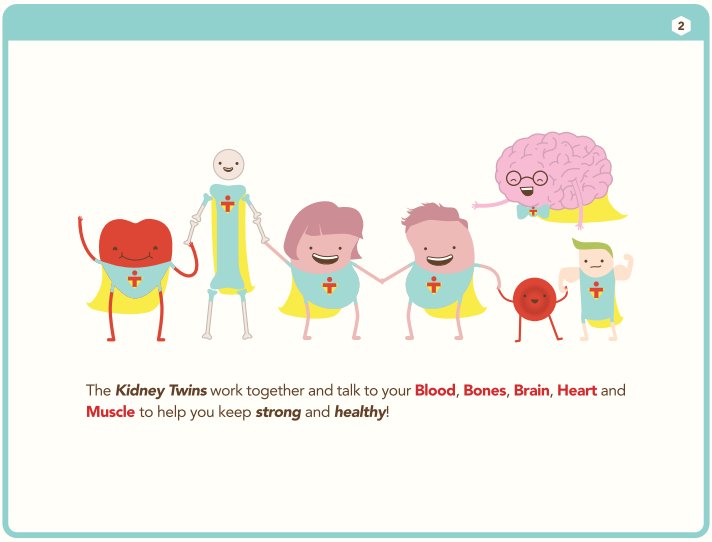
MY APPROACH

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.

LEARNING SUPPORTS

Have you got the Learning Supports you might want to use? A teaching doll; crayons; copy of activity sheet;





1. **Have you seen the Kidney Twins before?**

   What do you remember about the them?

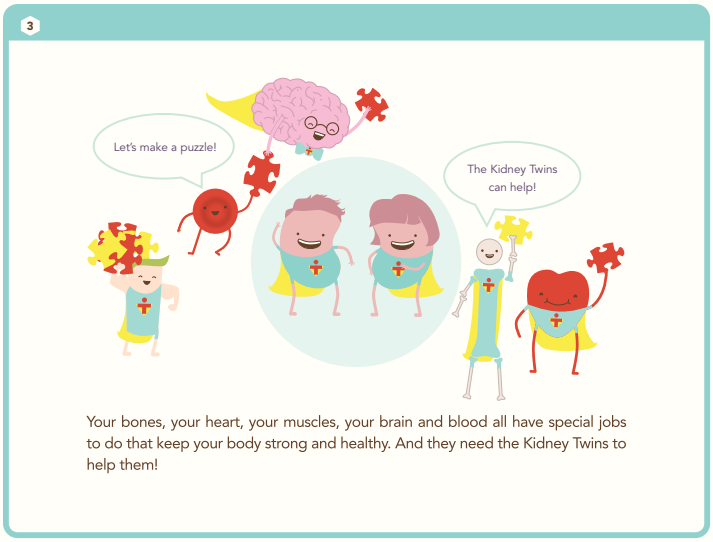
   - two kidneys
   - size of fist
   - balance
   - play with Blood
   - part of Body Team

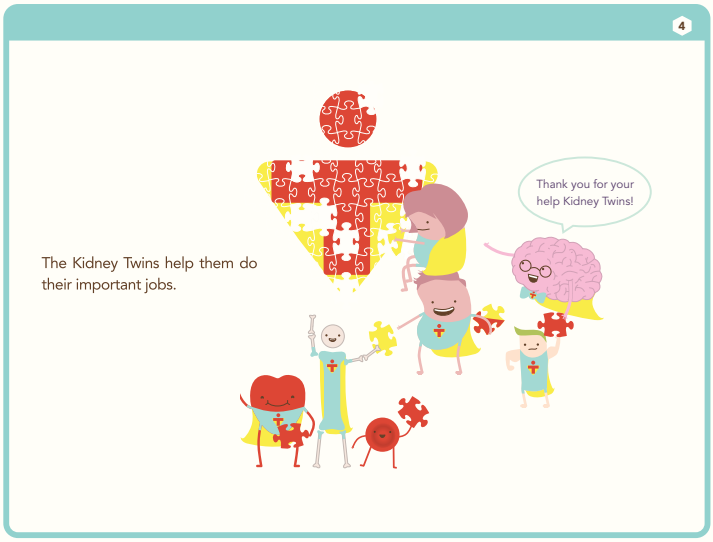
2. **Do you remember this team? This is the Body Team!**

   The Kidney Twins like to play with lots of other parts of your body. Do you remember any of the Body Team they play with?

   - Blood
   - Bone
   - Brain
   - Heart
   - Muscle

   The Kidney Twins like to help all these parts of your body stay strong and healthy!





3. **What are the different parts holding in this picture?**

   (Puzzle pieces)

   The different parts of your body do special jobs to keep you healthy. Your kidneys help your body parts do these jobs.

4. **The Kidney Twins like to help your body. They help different parts of your body do their jobs. They all play and work together – like doing a puzzle together.**

   Review Parent and Caregiver Resource.

UP NEXT: SCHOOL AGE LEVEL

SCHOOL AGE LEARNING

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 review that your kidneys:

a) recycle building blocks your body needs
b) get rid of things you body does not need

Know that your kidneys help keep:

c) your energy up
d) your bones strong
e) your heart healthy

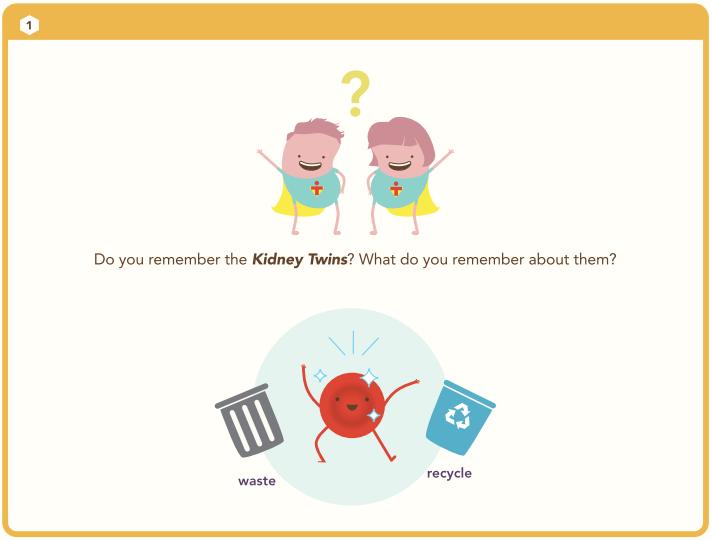
Possible activities include:

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; 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.

LEARNING SUPPORTS

Have you got the Learning Supports you might want to use? A teaching doll; crayons; copy of activity sheet;



1. ***You might want to begin by briefly revisiting objectives a) & b), from Balance, Module 3:***

   a) The kidney is a filter and knows the things you need and do not need in your body.
   b) Recognize terms: salt, water, protein, waste, minerals, blood.

   Do you remember the story about the Kidney Twins? Do you remember what one of their most important jobs is?

   (Hint: The Kidney Twins do some really important things with Blood)

   (Hint: do you remember the recycle bin and the garbage can?)

   The kidneys recycle the Building Blocks our bodies can use again and put the parts in the garbage that we can't use anymore.

2. **The kidneys have some very important jobs in our body. The kidneys know the right balance of Building Blocks.**

   If there is something your body does not need, the kidneys put it in the waste. The waste is in your urine. Urine is made up of water, lots of waste, salt and some minerals.

   If there is something your body can use again, where do you think the kidneys put it? Yes, the recycling bin!

   * **Optional Learning:** "Building blocks" is a way to explain how the body uses different substances together to make our body tissues and organs work, become stronger and healthier.

     The building blocks for each body system are different.

3. **The Kidney Twins do three more really important jobs for your body.**

   Can you guess who these jobs are for?

   Let's find out what these jobs are!

4. **The Kidney Twins help make more strong blood so you have energy to play.**

   The Kidney Twins send a special message to Bone: It's time to make more blood!

5. **Another important job the kidneys have is to help Heart stay healthy!**

   Remember that our kidneys like to help all the other parts of our Body Team.

   The kidneys help the heart in many ways. It's important to keep our kidneys healthy so they can help our heart stay healthy.

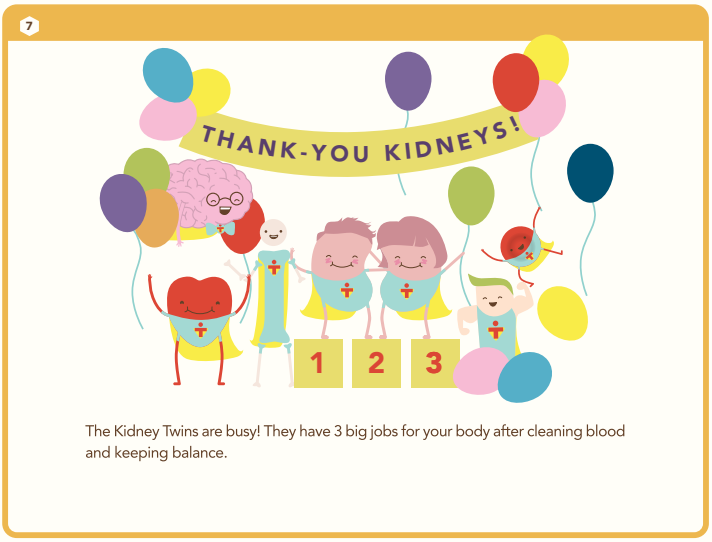
   * **Optional Learning:** Your kidneys help keep the right balance of salt and water for your heart.

6. **Job 3: The Kidney Twins give the right Building Blocks to Bone!**

   The kidneys know the right amount of the right Building Blocks for your bones to be healthy. The kidneys pass out Vitamin D, Calcium and Phosphate.

   * **Optional Learning:** "Building blocks" is a way to explain how the body uses different substances together to make our body tissues and organs work, become stronger and healthier.

     The building blocks for each body system are different. For example, the bones use the calcium, phosphate and vitamin D building blocks. Muscles need the right amount of protein, potassium, calcium and energy building blocks.



7. **The Kidneys have important jobs for our body. They:**

   - keep or recycle things our body needs
   - put things in the waste that our body does not need

   We heard about three other jobs the kidneys do just now. Can you remember any of them?

   - Make more strong blood keep (to keep our energy up)
   - Help keep our heart healthy
   - Keep our bones strong

   Review Parent and Caregiver Resource.

UP NEXT: ADOLESCENT LEVEL

ADOLESCENT LEARNING

ADOLESCENT LEARNING OBJECTIVES

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

The Adolescent will review that your kidneys keep:

a) balance in your body

Know that your kidneys help keep:

b) your energy up (have a role in making more strong blood)
c) your bones strong (have a role in vitamin metabolism)
d) your heart healthy (have a role in blood pressure)

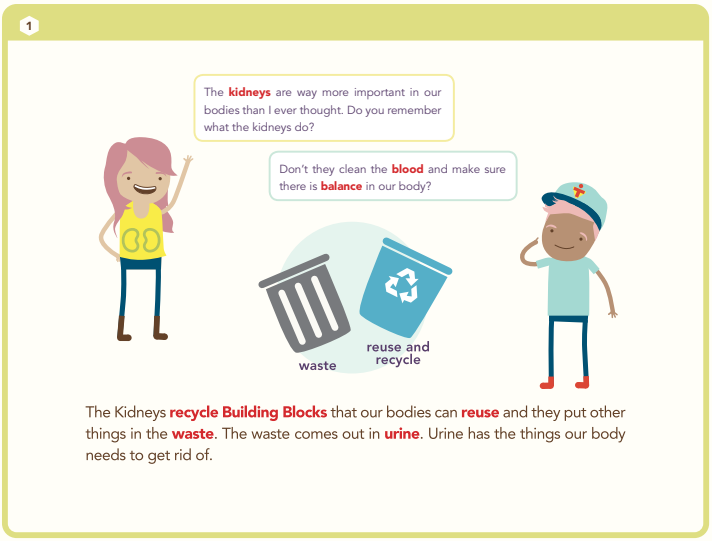
Possible activities include:

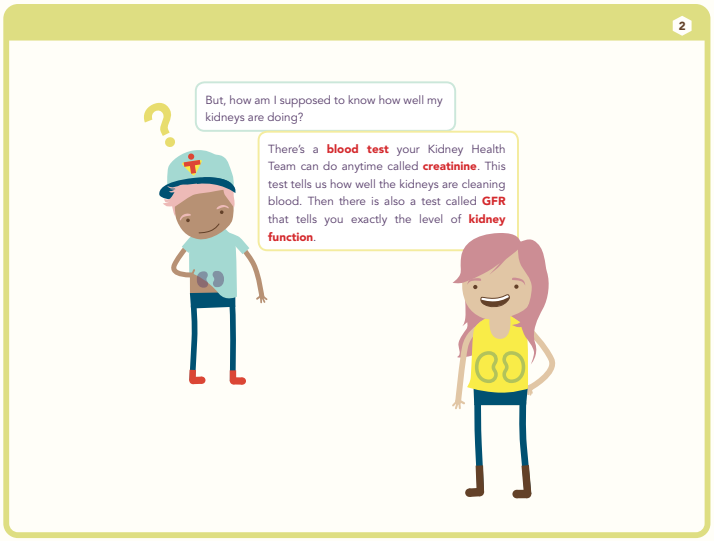
MY APPROACH

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? pencils / pens; copy of activity sheet;





1. **To begin, review balance and cleaning blood concepts:**

   - kidneys recycle Building Blocks that our bodies can reuse
   - kidneys put things in the waste that our bodies can no longer use

   The kidneys keep balance in our body. They know the right amounts of minerals, salts, water and vitamins that our body needs.

   We can check how well our kidneys are cleaning blood.

   * **Optional Learning:** "Building blocks" is a way to explain how the body uses different substances together to make our body tissues and organs work, become stronger and healthier.

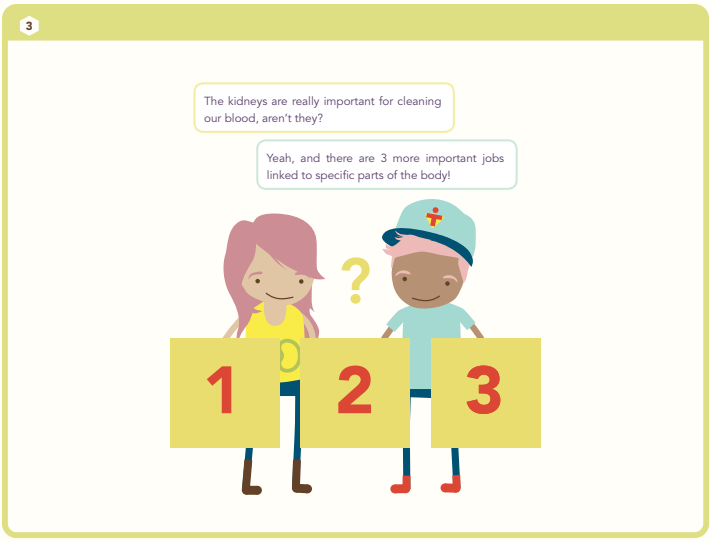
     The building blocks for each body system are different. For example, the bones use the calcium, phosphate and vitamin D building blocks. Muscles need the right amount of protein, potassium, calcium and energy building blocks.

2. **There is a blood test we can do to check how your kidneys are working. This test is called creatinine. This blood test can be done every time you visit the Kidney Health Clinic.**

   There is another test we can do if we need to know the exact level of kidney function. It is called a GFR test. The GFR test helps us understand how well your kidneys are cleaning your blood. The GFR test takes more time though than the creatinine test, so we don't do it every time.

   Aside from cleaning blood and keeping balance, there are 3 more important jobs the kidneys do.

   * **Optional Learning:** GFR stands for glomerular filtration rate, which is the amount of blood that the kidneys filter every minute.



3. **We don't always think of the kidneys as linked to other parts of the body but inside our body there are many linkages.**

   The kidneys do important jobs for many other body parts.

   Maybe this helps you understand how if your kidneys are not so healthy how we see the effects in other parts of your body.

   Let's find out what these jobs are and how they affect your health.

4. **The kidneys play a role in:**

   - making more strong blood (so keeping energy up)
   - keeping the heart healthy
   - keeping bones strong (vitamin D metabolism)

   First, the kidneys make sure we have lots of energy by telling our bones when it is time to make more strong blood.

   They kidneys send a message through a hormone, erythropoietin (pronounce a few times), that tells the bones it is time to make more blood.

5. **They kidneys send a message through a hormone, erythropoietin (pronounce a few times), that tells the bones it is time to make more blood.**

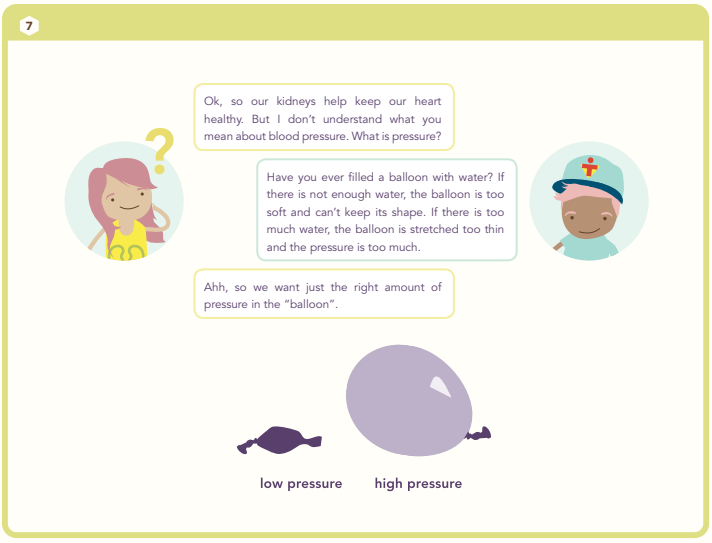
   We need lots of strong blood to have lots of energy.

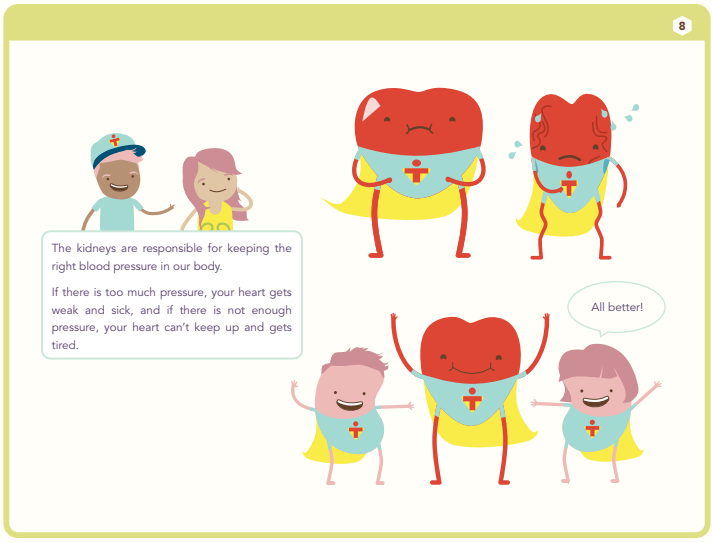
6. **The kidneys are much smarter than you might think. Your kidneys quietly influence many things in your body.**

   Your kidneys are important for helping your heart be healthy. Your kidneys know about blood pressure.

   So far we know that the kidneys keep balance; help our bones make more strong blood and help keep our heart healthy.

   There's another important job the kidneys do.





7. **Blood pressure can be a little difficult to understand.**

   Lets read what the characters have to say and see if we get it.

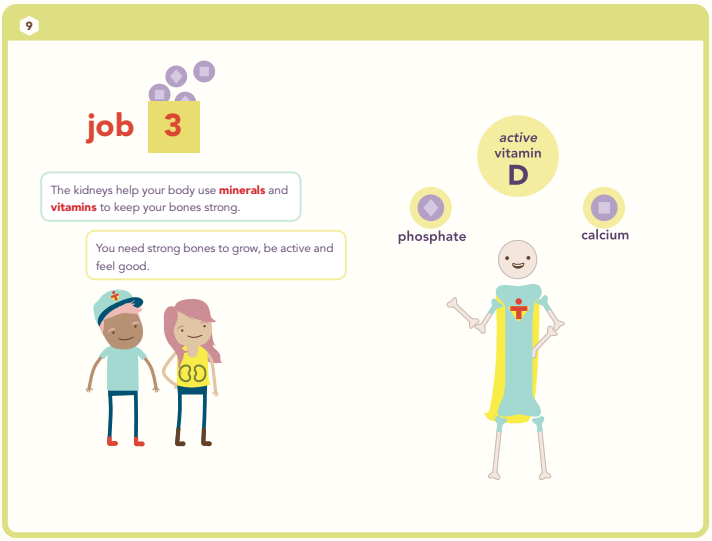
   * **Alternative Blood Pressure Metaphor:** A hose: when you turn on the tap to the hose, if it is only turned on a little, the hose is limp; if it is turned on too much, the hose becomes firmer and harder to bend.

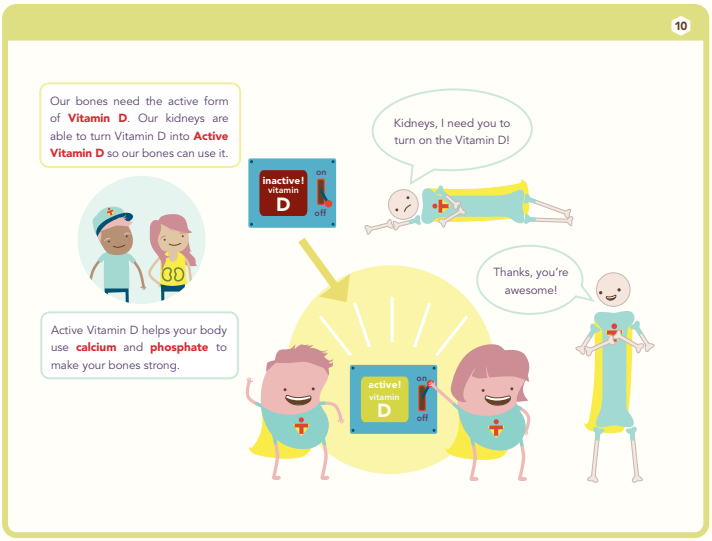
8. **Remember a few minutes ago, we heard that our kidneys are important for our heart health.**

   Your kidneys know the right balance of salt and water needed to keep your heart healthy.

   The kidneys also help regulate or control blood pressure.

   Your kidneys make chemicals to help balance blood pressure.





9. Your kidneys help your body use minerals and vitamins to keep your bones strong.

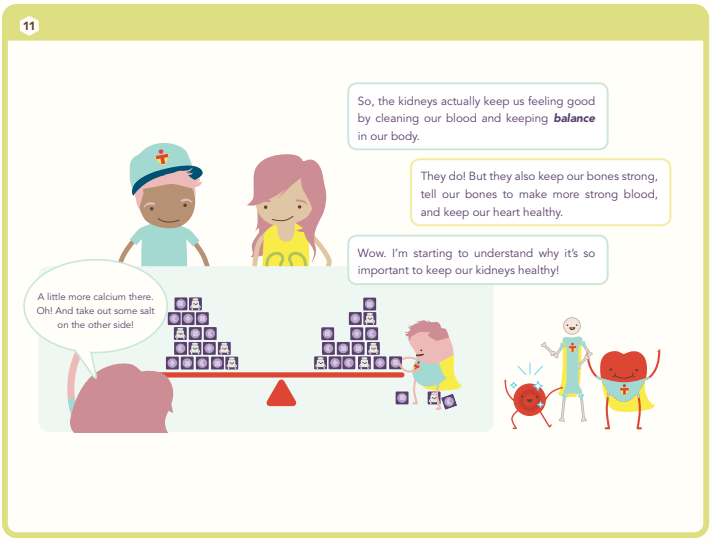
We need strong and healthy bones so we can grow well and have a strong frame for our body. Have you ever tried to put up a tent with bent tent poles? It doesn't work very well and it's similar for our body. We need a strong frame.

* **Facilitator Note:** 2 concepts:
1. kidneys have a special tool that turns on vitamin D
2. your bones need the turned on (active) vitamin D to use calcium and phosphate

10. Your kidneys help keep your bones strong and healthy.

Your kidneys are responsible for changing inactive Vitamin D to Active Vitamin D. Your body needs Active Vitamin D to use calcium and phosphate to make your bones strong

* **Optional Learning:** The body uses Active Vitamin D to help absorb calcium and phosphate.

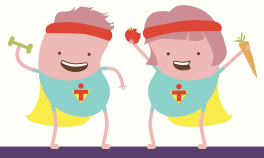


11. The kidneys have lots of jobs in our body. There are different tests the Kidney Health team does to check how well the kidneys are able to do their various jobs.

For making enough strong blood, we watch your red blood cell count. We can check how effectively the kidneys are "cleaning the blood" through measuring your GFR.

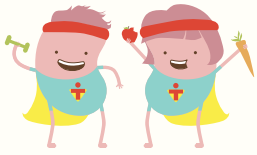
We can measure the health of the heart through echo and ECG. You probably remember that we check your blood pressure regularly too, right?

For your bone health, we check various minerals and vitamin levels to make sure your kidneys are helping keep your bones healthy.



ADDITIONAL NOTES

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