

# University of Kansas Imaging Toolkit

This toolkit contains resources to support both staff and children participating in research involving MRI imaging. Staff resources are represented below in black, while participant resources are in blue.

When printing documents from the toolkit, you may consider removing page numbers. You can remove page numbers by going to the *Insert* tab on the top of your screen and then selecting *Page Numbers* then *Remove Page Numbers*.

## Table of Contents:

Screening phone call script and assessment questions .....	2
MRI preparation book .....	3-4
Providing procedural support for children and teens .....	5-7
Supporting toddlers .....	8
Supporting preschoolers .....	9
Participation certificate .....	10-11
My Practice MRI Visit social story .....	12-20
Preparing for your child's MRI visit .....	21
My MRI Visit social story .....	22-32
First Then board .....	33-37
My MRI Visual Schedule .....	38-43
Get To Know Me card .....	44-45
References .....	46-47

# Screening phone call script and assessment questions

Goals: introduce self and study, provide overview of study and scan expectations, learn more about the participant to determine if appropriate for study and, if appropriate, how to support during study.

Hello, my name is \_\_\_\_\_. I am calling from The University of Kansas to tell you about a study your child may be eligible for. Are you the parent/caregiver of \_\_\_\_\_?

Do you have time to discuss the study and your family's interest in participating?

Explain the study goals, expectations, timeframes, benefits.

## Assessment questions:

- How does your child cope in the medical environment or at doctor appointments?
- How does your child cope with new experiences?
- Do you have any concerns about your child's ability to complete the study steps?
- Does your child have any diagnoses that would make this experience challenging?
- How would describe your child's personality?
- What helps your child handle challenges at home or school (ex: when they do not want to do something or are scared)?
- What motivates your child?
- Does your child like to know what to expect, or do they cope best with limited information?

## *If Autism or developmental delays are suspected/disclosed:*

- How does your child best receive information (ex: verbal, modeling, visual supports such as social stories and visual schedules...)?
- How does your child communicate (ex: gestures, sign language, communication boards...)?
- Does your child have any sensory challenges?
  - Are they sensory seeking? Do they like to touch objects? Do they enjoy being touched such as hugs or hair brushing?
  - Are they sensory avoiding? Do they have trouble wearing clothes, hats, shoes? Or dislike certain sounds, textures, or sensations?

## *If an MRI is part of the study:*

- Has your child completed medical imaging before, such as an x-ray, ultrasound, CT scan, MRI scan?
  - If yes, how did they handle that experience?
- How does your child handle loud noises?
- How is your child's activity level? Are they able to sit/lie still?
- Is your child able to wear things on their head, such as headphones, hats, sunglasses?
- How does your child handle enclosed/tight spaces, such as tunnel slides, crowded elevators, tents?

# MRI Preparation Book

Most children do better when they know what to expect. Preparing children with pictures is a good way to help them know what will happen. This resource contains pictures in sequential order, like a visual schedule but with no text. Staff can use the preparation book as a visual aid to prepare children in person and prior to the MRI. Staff should explain each picture and allow time for questions. To create the preparation book, you will need to print, laminate, and cut out the pictures. Use a hole puncher to place a hole in the top left corner of each picture and adjoin pictures in sequential order with a ring clasp.

## My MRI Visit







# Providing Procedural Support for Children and Teens

## Provide Preparation

Most children and teens do better when they know what to expect. Providing developmentally appropriate preparation is important but challenging if you do not know the child/teen well. Utilize the caregiver and information obtained from the assessment phone call to guide preparation.

### *Tips:*

- Ask questions to learn their current understanding; "Can you tell me why you are here?"
- Be clear and direct
- Explain procedure steps in order of sequence
- Explain what things will look, feel, smell, and sound like
- Give clear expectations of timeframes
- Use visuals (pictures, social story, visual schedule)
- Welcome questions
- Read non-verbal cues
- Stop and reassess need to continue if child becomes upset; "Can you tell me why you are crying?"
- Clear up misconceptions

## Be Honest

To build a trusting and positive relationship, children/teens need to trust you. If you don't tell them the truth, they will likely not trust you and other healthcare workers in the future.

**Do:** Use simple, direct, and *some kids say* language; "Some kids say it feels like a pinch."

**Don't:** Lie, withhold important information, or trick/mislead them

## Validate Feelings

Validating a child/teen's feelings is a sign of respect. Children deserve respect and can usually tell when someone is not interested in helping or getting to know them.

**Do:** Listen, ask for clarification if you don't understand or hear them, acknowledge their feelings/statements; "I understand you don't want to lie down.", "Tell me more about that.", "Other boys and girls tell me they are scared too."

**Don't:** Ignore, minimize, or dismiss their feelings/statements, tell them how they should feel; "This is not scary.", "When we get started, you will feel better."

Use "Big kid" comments or ask them to be brave; this implies that they are not acting like a big kid and/or not being brave; "I need you to be a bigkid for me.", "Can you be brave?"

## Provide Praise

Praise can go a long way with children/teens. A lot of children seek approval from others.

**Tips:** Provide frequent praise for specific behaviors; "You are doing a great job keeping your body still."

## What to do when:

**Should a child/teen ask to stop or exhibit the following behaviors after supportive measures are provided, efforts to complete the MRI should stop.**

- Refusal to enter room or proceed with scan steps (lie on bed, wear headphones...)
- Inconsolable (crying, panicking, screaming...)

### **A child won't begin the MRI**

*First: Acknowledge the feeling and/or behavior*

- Stop what you are doing, get on the child's level (squat down to their eye level), and ask what they are thinking/feeling; "I see you stopped at the door, tell me what you are thinking."
- If they share their feelings/thoughts, acknowledge them; "I hear you say that you are scared of the camera."

*Then: Provide encouragement*

- Remind them that you and other staff are there to help
- Remind them that they have practiced the MRI at an earlier visit and did a great job
- Remind them of any "after" plans (see picture of their brain, go to a playground...)
- Let them know you believe in them; "I think you can do this!"

*Next: Offer strategies to combat fears and encourage progress*

- Take things one step at a time
  - Inform child of this plan and then encourage first step, make the first step easy to build confidence; "How about we take things one step at a time? First, we will look at the camera."
  - Continue to share simple expectation of each step; "Now it is time to sit on the bed.", "Now it is time to lie down."
  - Provide praise for trying and completing steps; "You are doing a great job listening!", "We are proud of you!"
  - Offer help as steps progress; "Would you like for me to help you lie down?"
- Use *Visual Schedule* in real time; have child follow visual schedule to complete beginning steps
- Utilize the caregiver to help encourage and suggest best plan

### **A child is moving during the MRI**

*First: Tell them that they are moving, so that they are aware*

- "Ben, that last picture was blurry. It looks like you are moving your body."
- When possible, be specific about what appears to be moving; "Ben, I can see you are moving your arms in there."

*Then: Give them an opportunity to respond*

- “How are you doing?”, “Do you know that you are moving?”

*Next: Remind them of their job*

- “Remember your job? We want you to lie very still.”
- “In order to get a good picture of your brain, you need to be very still.”

*And: Make changes, if needed*

- Enter room and make adjustments to promote comfort and decrease movement (reposition body, adjust clothing, provide stress balls to hold in hands, remove shoes...)

*Then: Provide encouragement*

- Use phrases that encourage expectations; “Keep your body very still.” Instead of “Don’t move.”
- Let them know you believe in them; “I think you can do this.”
- Remind them of any “after” plans (see picture of their brain, go to a playground...).

*Next: Provide estimated timeframe*

- “The next picture is four minutes long. I will check on you after that picture.”
- “We only have three pictures left!”

*Finally: Resume scan*

## **A child becomes upset during the MRI**

*First: Acknowledge the feeling and/or behavior*

- Stop scan as soon as possible and ask what they are thinking/feeling; “Ben, are you okay? I hear you crying.”, “Ben, are you okay? I think I heard you asking for your mom.”
- If they share their thoughts/feelings, acknowledge them; “I hear you say that you are scared.”, “I hear you say you want your mom.”

*Next: Provide reassurance, praise, encouragement, and expectations*

- Remind them that they are safe and that you can see and hear them
- Provide praise; “You are doing a great job!”
- Ask how you can help and offer to adjust equipment or position if something is bothering them; “Is there something I can do to help you finish the pictures?”
- Tell them the remaining scan time or picture count; “We only have two pictures left!”
- Remind them of any “after” plans (see picture of their brain, go to a playground...)
- Encourage progress; “I am going to take the next picture. I will check on you after that picture and you can tell me how you feel.”

*Then: If unable to calm through intercom, enter the scan room to provide support in person and stop efforts.*

- Be sure to remove any equipment preventing eye contact when speaking with the child

# Supporting Toddlers

*2-3 years old*



## Typical development:

- I can use words to make requests.
- I like to do things without the help of others.
- I am learning to take care of myself (feed and dress).
- I like to have control of my body, explore places, and be active.
- I thrive with consistency/routine.
- I like it when you talk to me and tell me what you are doing.
- Playing is important to me. I learn through play and feel confident playing.
- I have a short attention span and become frustrated easily.
- I am mostly concerned with MY thoughts and have a hard time understanding others' points of view.

## Common stressors:

- Separation from caregivers
- Unfamiliar environment (new people, place, equipment)
- Loss of control, inability to use body and make choices (lying down, being told what to do)
- Being overstimulated (too many people talking at one time)

## Ways to help in the MRI environment:

- Build rapport through playing, smiling, and talking on their eye level
- Include caregiver(s) as much as possible
- Encourage use of familiar comfort items (blanket, stuffed animal, toy)
- Allow exploration of environment (seeing room from different angles, touching camera)
- Model procedure steps (have a person or stuffed animal lie on and ride the camera bed)
- Use play to teach and familiarize tools and equipment (syringe play, doll model scanner)
- Explain steps before doing them ("I am going to raise the bed now.")
- Give jobs ("Your job is to keep your body very still.")
- Provide choices ("Do you want to put the headphones on or do you want me to help you put the headphones on?")
- Don't ask questions if the answer cannot be no ("Are you ready to get started?")
- Only have one voice talking at a time to decrease confusion and frustration
- Stay calm and be patient



# Supporting Preschoolers

*3 -5 years old*



## Typical development:

- My vocabulary is increasing. I can speak in sentences.
- I like to talk about my accomplishments and interests.
- I like to use my imagination (pretend play, tell stories).
- I do not have a good understanding of time.
- I am learning about rules, waiting my turn, and sharing.
- My fine motor skills are developing (using scissors, writing name, zipping jacket).

## Common stressors:

- Prolonged separation from caregivers
- Pain, both the fear of pain and pain sensations
- Frightening fantasies and misconceptions
- Loss of control, inability to use body and make choices (lying down, being told what to do)
- Medical procedures can be seen as punishment

## Ways to help in the MRI environment:

- Build rapport by asking about their interests
- Provide preparation before starting, imagining what a procedure will be like can be worse than reality
- Use clear language and avoid words with double meanings ("stool", "Cat scan")
- Clear up any misconceptions
- Address concerns regarding pain
  - If pain **is not** expected, provide reassurance
  - If pain **is** expected, give simple explanation and use "some kids say" language ("Some kids say it feels like...".)
- Give jobs ("Your job is to keep your body very still.")
- Explain steps before doing them ("I am going to raise the bed now.")
- Use concrete and familiar examples to explain expected timeframes ("It is going to take as long as a Bluey episode.")
- Provide choices
- Don't ask questions if the answer cannot be no ("Are you ready to get started?")
- Include caregiver(s) as much as possible

## Participant Certificate

Provide the certificate to the participant directly following the MRI.

There are two versions of this resource.

- Toolkit version (included here): you will need to print and write participant's name on it.
- Canva version: click the below link for access. You will need a Canva account, which is free, to print or save this document. To print, click the *share* button (top right of the screen), then *download*, then *PDF Print*, then *Download*. Locate the downloaded document and print.

[https://www.canva.com/design/DAFdZbZXQW8/ GTkZCtCf5t9TPuvnh5qeA/edit?utm\\_content=DAFdZbZXQW8&utm\\_campaign=designshare&utm\\_medium=link2&utm\\_source=sharebutton](https://www.canva.com/design/DAFdZbZXQW8/ GTkZCtCf5t9TPuvnh5qeA/edit?utm_content=DAFdZbZXQW8&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)



# CERTIFICATE



Of Completion

**Proudly Presented to**

For assisting the research team in advancing scientific knowledge



\_\_\_\_\_  
Principal Investigator

\_\_\_\_\_  
Research Coordinator

## My Practice MRI Visit social story

Most children do better when they know what to expect. Preparing children with a social story is a good way to help them know what will happen. Provide the social story to the participant weeks before the practice MRI visit so that they have time to read it and ask questions. The story should be read at home by the participant or a caregiver.

There are two versions of this resource.

- Toolkit version (included here)
- Canva version: click the below link for access. You will need a Canva account, which is free, to print or save this document. To print, click the *share* button (top right of the screen), then *download*, then *PDF Print*, then *Download*. Locate the downloaded document and print.

[https://www.canva.com/design/DAFeC4g5g6c/W8tsfTE4xR3OZ80uM\\_UwzA/edit?utm\\_content=DAFeC4g5g6c&utm\\_campaign=designshare&utm\\_medium=link2&utm\\_source=sharebutton](https://www.canva.com/design/DAFeC4g5g6c/W8tsfTE4xR3OZ80uM_UwzA/edit?utm_content=DAFeC4g5g6c&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)

Most children do better when they know what to expect. Preparing children with a story is a good way to help them know what will happen. The story should be read at home by the child or a caregiver leading up to the practice MRI visit.

# **My Practice MRI Visit**





**My name is \_\_\_\_\_.**

**This is a story about my practice MRI visit.**

**My parent and scanner buddy will  
come with me to this visit.**

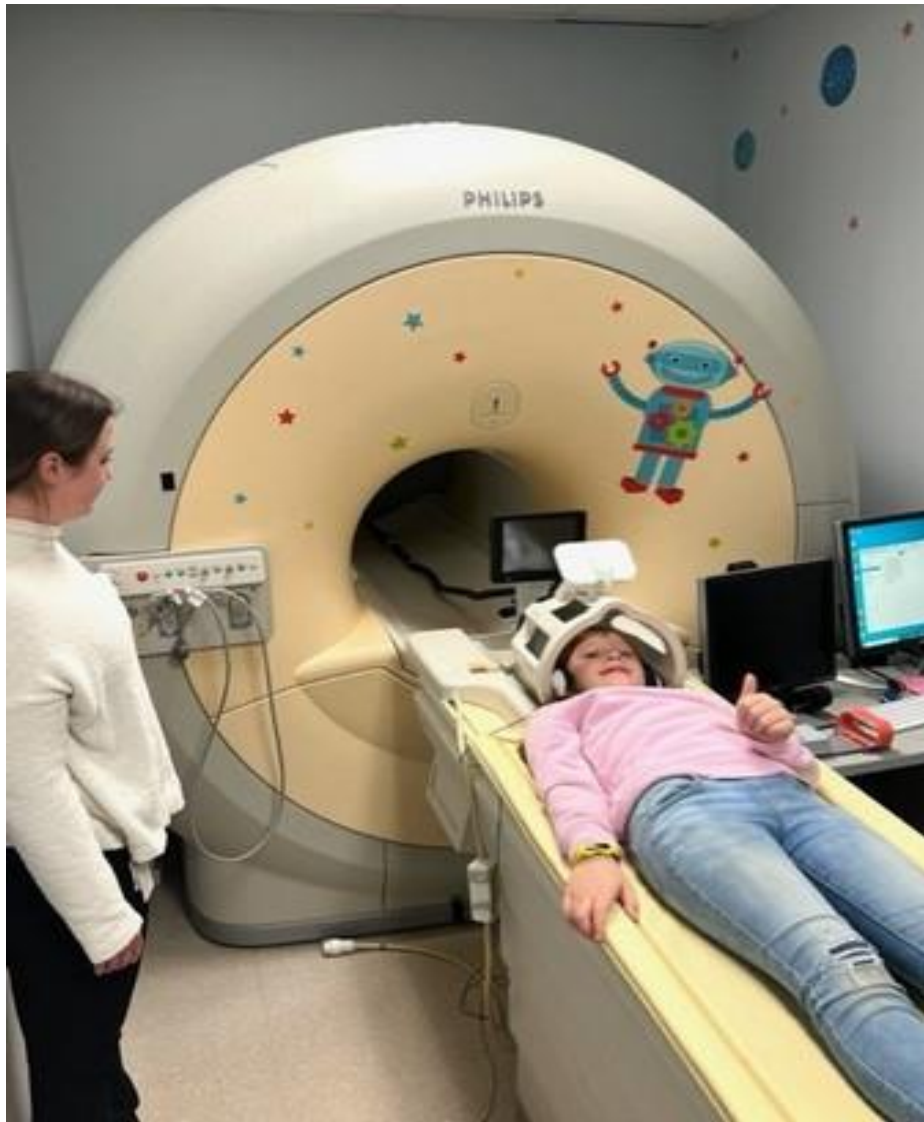
**The practice MRI camera is in this building.**



**This is what the practice MRI camera looks like. Some people say that MRI cameras look like a donut.**  
**My scanner buddy will help me know what to do.**  
**The first step is lying down on the bed, like this.**



**Next, my scanner buddy will place soft headphones over my ears.**



**When I am ready, my scanner buddy will move the bed up slowly. Then, a piece of equipment, like a helmet, will be placed around my head.**

**The helmet should not touch me.**

**The helmet is used so that the camera knows to take pictures of my brain.**





**My scanner buddy will give me a button to hold in my hand.  
I will press the button if I need help during the pictures.  
When I am ready, my scanner buddy will move the bed slowly  
into the camera. They will make sure that I am comfortable as I  
move into the camera.**





**When I am ready, my scanner buddy will play the noises  
that the camera makes when it takes pictures.  
A lot of people say that the noises sound like knocking and  
beeping. The noises are loud.  
My headphones will help block the noises.  
My job is to be very still.**




**When I am done practicing, my scanner buddy will slowly move the bed out of the camera and down. They will take the helmet off and help me remove the headphones so that I can sit up. Everyone is proud of me for following directions and practicing my MRI.**

# Preparing for your child's MRI visit

Talking to your child about the MRI before the visit can be helpful.

Please read this document before your child's MRI.

Ways you can help prepare your child:

- Remind them of their practice MRI visit and that their scanner buddy will be at this visit to help
- Discuss the reason for the MRI and what body part we will be taking pictures of
- Reassure them that nothing should hurt
- Remind them that their job is to lie still
- Read the provided **My MRI Visit** story
- Watch the **What's An MRI?** video (<https://youtu.be/ZZG8-Z-dMYU>  )
- Create the provided **First Then board**
- Review the provided **My MRI Visual Schedule**
- Play MRI sounds, by searching "MRI sounds" on the internet, so that they can become use to them
  - Have them tell you what *they* think the noises sound like, instead of *you* telling them what *you* think they sound like
- Have them practice lying still on a flat surface with headphones on and the MRI sounds playing loudly
- Create a coping plan for the MRI visit, which might include:
  - Bringing a comfort item (blanket, stuffed animal) to hold; comfort items cannot contain metal
  - Thinking about a favorite place or upcoming event during the MRI
  - Planning to do something fun after the MRI (get ice cream, play at a park...).

Helpful Info:

- Your child may eat and drink before their MRI.
- You, the caregiver, will not be allowed in the camera room. You will wait outside of the camera room during the MRI.

The MRI scanner is a magnet, so no metal will be allowed in the camera room. Please have your child dress in clothing that does not contain metal, such as zippers and buttons. If your child wears reading glasses, please provide your child's eye prescription to their scanner buddy so that MRI safe glasses can be provided.

## My MRI Visit social story

Most children do better when they know what to expect. Preparing children with a social story is a good way to help them know what will happen. Provide the social story to the participant weeks before the MRI visit so that they have time to read it and ask questions. The story should be read at home by the participant or a caregiver.

There are two versions of this resource.

- Toolkit version (included here)
- Canva version: click the below link for access. You will need a Canva account, which is free, to print or save this document. To print, click the *share* button (top right of the screen), then *download*, then *PDF Print*, then *Download*. Locate the downloaded document and print.

[https://www.canva.com/design/DAFf0KExAZ8/hN7JKuiNySSFTa\\_TB6JSDA/edit?utm\\_content=DAFf0KExAZ8&utm\\_campaign=designshare&utm\\_medium=link2&utm\\_source=sharebutton](https://www.canva.com/design/DAFf0KExAZ8/hN7JKuiNySSFTa_TB6JSDA/edit?utm_content=DAFf0KExAZ8&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)

Most children do better when they know what to expect. Preparing children with a story is a good way to help them know what will happen. The story should be read at home by the child or a caregiver leading up to the MRI visit.

# **MY MRI Visit**





**My name is\_\_\_\_\_.**

**This is a story about my MRI visit.**

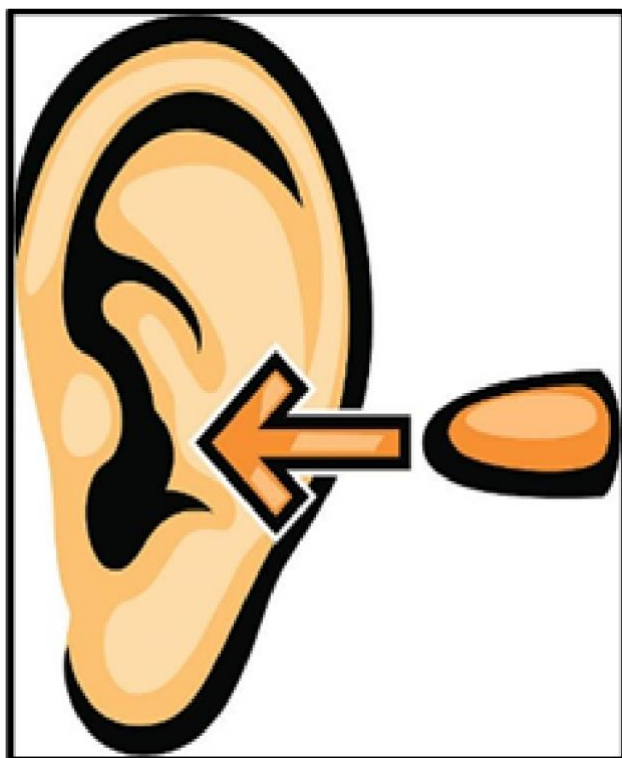
**This is what the MRI camera looks like.**

**Some people say that MRI cameras look like a donut. The camera will take pictures of my brain. It does not hurt when the pictures are taken.**



**Before entering the MRI room, I will use the restroom and take off any metal, like jewelry or hair clips.**

**The MRI camera is a magnet so metal cannot go into the room. The MRI tech (picture taker) will use a metal detector to make sure that I do not have any metal on me.**



**The MRI tech will give me soft earplugs to place in my ears. I can place the earplugs or an adult can help me. The earplugs will help the camera noises not be so loud.**



**Next, I will enter the room and the MRI tech and my scanner buddy will help me get comfortable lying on the camera bed.**

**They may place a soft mat under my knees to make me comfortable. They will also give me a button to hold in my hand. I will push the button if I need help during the pictures.**

**Once I am comfortable, headphones will be placed on my ears. The headphones will help the camera noises not be so loud.**





**Next, a piece of equipment, like a helmet, will be placed around my head. The helmet should not touch me. The helmet is used so that the camera knows to take pictures of my brain. My scanner buddy will check on me and make sure I am comfortable and ready to start the pictures.**





**When I am ready, the bed will move into the camera. My scanner buddy and the MRI tech will leave the room and watch me from the computer room. When the camera takes pictures, it will make loud noises.**

**My job is to be very still.**

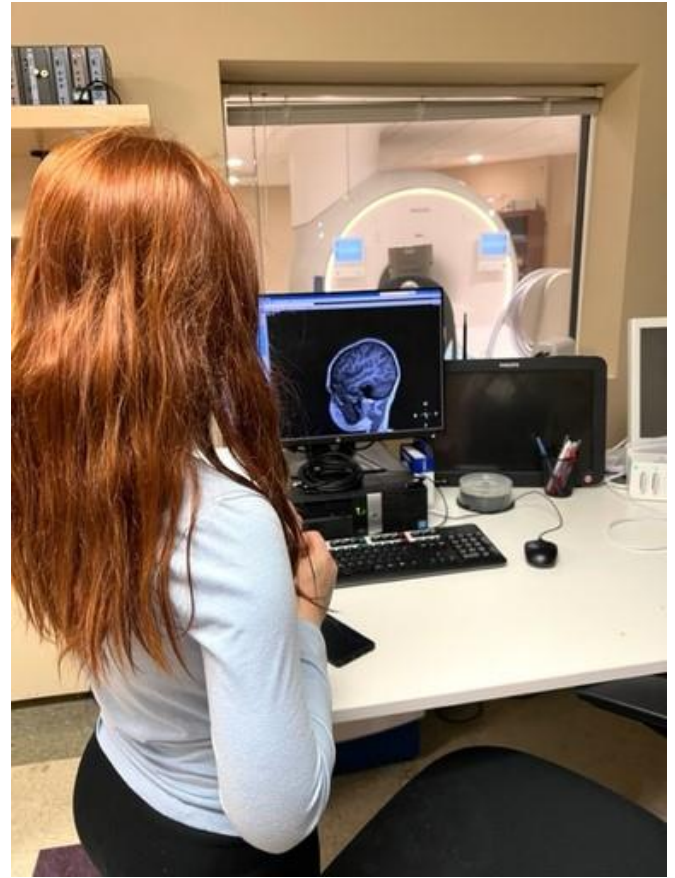
**My scanner buddy will check on me. I will hear their voice through a speaker in the camera. I need to answer with my words when they check on me.**



**When I am done, my scanner buddy and the MRI tech will enter the room and help me get off the bed. They will move the bed out of the camera and take the equipment off.**



**Everyone is proud of me for keeping my body still and following directions for my MRI.**



**Before leaving, I get a certificate for doing a great job  
and I get to see pictures of my brain!  
My MRI pictures are going to help others learn.**



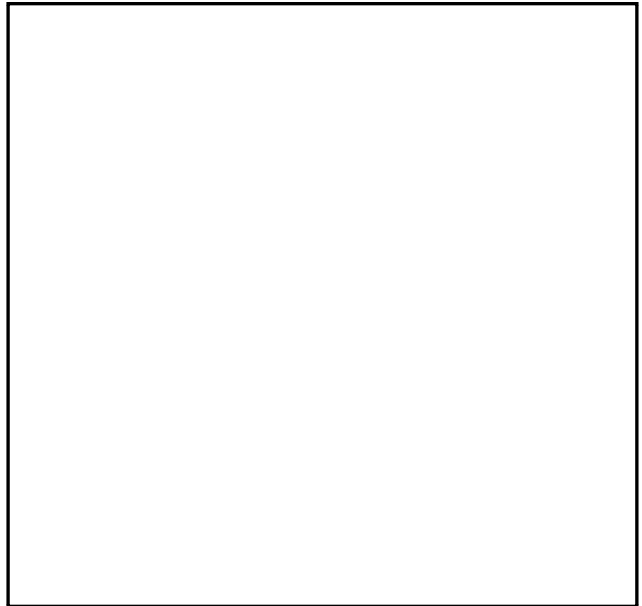
## **First Then board**

A First Then board can be used as a visual aid to motivate completion of a potentially challenging task by planning an enjoyable task to follow the challenging task. Provide the First Then board to the participant weeks before the MRI visit so that they have time to create a plan. The board should be created at home with the participant and a caregiver prior the MRI visit.

Use this **First Then board** at home to create a plan for your child's MRI visit. A **First Then board** can be used as a visual aid to motivate completion of a potentially challenging task by planning an enjoyable task to follow the challenging task. **First** the MRI, **then** an enjoyable activity to follow the MRI. The **then** activity should be offered directly following the MRI. If you do not see your child's **then** activity included here, you or your child may draw a picture of the activity or find an image online.

Bring your child's **First Then board** to their MRI visit to motivate and remind them of their plan.

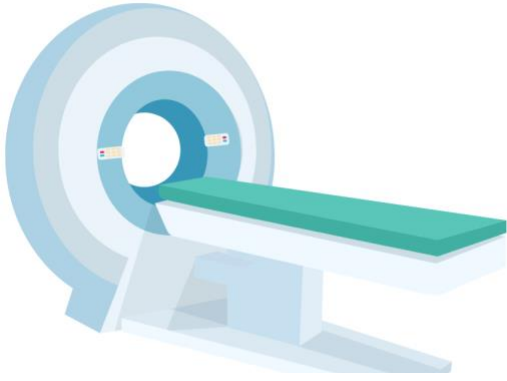
# First → Then

A large, empty rectangular box with a black border, intended for drawing or writing the 'First' activity.A large, empty rectangular box with a black border, intended for drawing or writing the 'Then' activity.



## First Images

**MRI**



**MRI**



## Then Images

**Playground**



**Ice Cream**



## Then Images *continued*

**Chick-fil-A**



**McDonald's**



**Target**



**Tablet time**



**New Toy**



**Visit Family or Friend**



## Then Images *continued*

See picture of my brain



Money



Certificate





## **MY MRI Visual Schedule**

A visual schedule can be used to prepare and motivate appointment steps in a simple and clear way. Provide the visual schedule to the participant weeks before the MRI visit so that they have time to review it. The schedule should be reviewed at home with the participant and a caregiver prior the MRI visit. The participant should bring their schedule to the MRI visit so that they can use it to know what will happen.

# My MRI Visual Schedule

Use this visual schedule at home **and** the day of the MRI to help your child know what will happen at their MRI visit. A visual schedule can be used to prepare and motivate appointment steps in a simple and clear way. You may use the schedule below or create a different one, better suited for your child, by selecting preferred steps. If creating a different schedule, you can cut and tape/glue the preferred steps to a new piece of paper, making sure the images remain in order of when they will occur.

Bring your child's schedule to their MRI visit so that they can use it to know what will happen. After each step is completed, praise and a completion action (sticker placed or check mark drawn beside the step) should occur. If helpful, the schedule can be used in the MRI room with your child's scanner buddy. Please do not use staples. Staples are metal and not allowed in the MRI room.

		Walk to camera room
		Go to restroom



Use metal  
detector



Put earplugs in  
ears



Enter room and  
lie on bed





Get comfortable  
and put  
headphones on  
ears



Place helmet  
around head and  
get ready to start



Move bed into  
camera

Be very still for  
pictures

Listen for directions



All done!

Move bed out of  
camera  
and take off  
equipment



Get off bed



I did great!  
I am proud  
of myself!



See pictures of  
my brain



Get certificate for  
doing a good job!



Walk to car

## Get To Know Me card

Building rapport with a child is a crucial step in establishing a trusting relationship and providing effective procedural support. Provide this resource to the participant to learn about their interests and questions/thoughts regarding the MRI. Ask that the child or caregiver to complete the card and bring to an appointment that occurs prior to the MRI. Utilize information learned from the card to engage the child in conversation and answer any questions regarding the MRI.

There are two versions of this resource.

- Toolkit version (included here)
- Canva version: click the below link for access. You will need a Canva account, which is free, to print or save this document. To print, click the *share* button (top right of the screen), then *download*, then *PDF Print*, then *Download*. Locate the downloaded document and print.

[https://www.canva.com/design/DAFd7gRi3ps/dr6klulOMpXafa8wq217Rg/edit?utm\\_content=DAFd7gRi3ps&utm\\_campaign=designshare&utm\\_medium=link2&utm\\_source=sharebutton](https://www.canva.com/design/DAFd7gRi3ps/dr6klulOMpXafa8wq217Rg/edit?utm_content=DAFd7gRi3ps&utm_campaign=designshare&utm_medium=link2&utm_source=sharebutton)

# Get To Know Me

My name is

## My Favorites

Color:

Food:

Activity:

I am  
years old.

I am really good at

My feelings  
about the MRI are:

---

---

---

---

---

---

---

---

My questions  
about the MRI are:

---

---

---

---

---

---

---

---



# Toolkit Reference List

Al-Yateem, N. S., Issa, W. B., & Rossiter, R. (2015). Childhood stress in healthcare settings: Awareness and suggested interventions. *Issues in Comprehensive Pediatric Nursing*, 38(2), 36-153.

Barnea-Goraly, N., Weinzimer, S. A., Ruedy, K. J., Mauras, N., Beck, R. W., Marzelli, M. J., . . . & Fox, L. (2014). High success rates of sedation-free brain MRI scanning in young children using simple subject preparation protocols with and without a commercial mock scanner - the Diabetes Research in Children Network (DirecNet) experience. *Pediatric Radiology*, 44, 181-186.

Boles, J.C. (2013). Speaking up for children undergoing procedures: The ONE VOICE approach. *Pediatric Nursing*, 39(5), 257-260.

Boles, J.C. (2018). Preparing children for healthcare encounters. In J. Rollins, C. Mahan, and R. Bolig (Eds.), *Meeting Children's Psychosocial Needs Across the Healthcare Continuum*. Austin, TX: Pro-Ed, Inc.

Boles, J.C., Fraser, C., Bennett, K., Jones, M., Dunbar, J., Woodburn, A., Gill, M., Duplechain, A., Munn, E., & Hoskins, K. (2020, January). The value of Certified Child Life Specialists: Direct and downstream optimization of pediatric patient and family outcomes (Full report). Retrieved from: [https://www.childlife.org/docs/default-source/aclp-official-documents/value-of-a-certified-child-life-specialist\\_full-report.pdf](https://www.childlife.org/docs/default-source/aclp-official-documents/value-of-a-certified-child-life-specialist_full-report.pdf)

Cejda, K. R., Smeltzer, M. P., Hansbury, E. N., McCarville, M. E., Helton, K. J., & Hankins, J. S. (2012). The impact of preparation and support procedures for children with sickle cell disease undergoing MRI. *Pediatric Radiology*, 42, 1223-1228.

Fraser C. Gray S. B. & Boles J.C. (2019). Patient awake while scanned: Program to reduce the need for anesthesia in pediatric MRI. *Pediatric Nursing* 283–288.

Johnson, N. L., & Rodriguez, D. (2013). Children with autism spectrum disorder at a pediatric hospital: A systematic review of the literature. *Pediatric Nursing*, 39(3), 131-141.

Kada, S., Satinovic, M., Booth, L., & Miller, P. K. (2019). Managing discomfort and developing participation in non-emergency MRI: Children's coping strategies during their first procedure. *Radiography*, 25, 10-15.

Leach, M. J. (2005). Rapport: A key to treatment success. *Complementary Therapies in Clinical Practice*, 11, 262-265.

Leroy, P. L., Costa, L. R., Emmanouil, D., van Beukering, A., & Franck, L. S. (2016). Beyond the drugs: Nonpharmacological strategies to optimize procedural care in children. *Current Opinion in Anaesthesiology*, 29(1), S1-S13.



Liddle, M., Birkett, K., Bonjour, A., & Risma, K. (2018). A collaborative approach to improving health care for children with developmental disabilities. *Pediatrics*, 142(6), e20181136.

Mastro, K. A., Flynn, L., Millar, T. F., DiMartino, T. M., Ryan, S. M., & Stein, M. H. (2019). Reducing anesthesia use for pediatric magnetic resonance imaging: The effects of a patient- and family-centered intervention on image quality, health-care costs, and operational efficiency. *Journal of Radiology Nursing*, 38(1), 21-27.

McCue, K. (2018). Therapeutic relations in child life. In R.L. Thompson (Ed.), *The Handbook of child life: A guide for pediatric psychosocial care* (2<sup>nd</sup> Ed.) Springfield, IL: Charles C. Thomas Publishers.

Pearson, L.J. (2018). Children's hospitalization and other healthcare encounters. In J. Rollins, C. Mahan, and R. Bolig (Eds.), *Meeting Children's Psychosocial Needs Across the Healthcare Continuum* (2<sup>nd</sup> Ed.) Austin, TX: Pro-Ed, Inc.

Straus, J., Coburn, S., Maskell, S., Pappagianopoulos, J., & Cantrell, K. (2019). Medical encounters for youth with autism spectrum disorder: A comprehensive review of environmental considerations and interventions. *Clinical Medicine Insights: Pediatrics*, 13. doi: 10.1177/1179556519842816