Pediatric Functional Abdominal Pain

PRESENTED BY: Ciera Korte, PhD
DATE: Feb 10, 2026

DISCLOSURES

- I have nothing to disclose.

LEARNING OBJECTIVE

Following this presentation:

Learners will be able to identify functional abdominal pain in pediatric patients and provide evidence-based treatment strategies to reduce symptom burden, distress and related impairment

CASE STUDY: KAYLEE

- Kaylee is a 12-year-old cisgender female who presents with chronic daily periumbilical abdominal pain and infrequent nausea.
- Symptoms have been present on and off for 4 years, since Fall of 2021 following a viral illness and post-pandemic school re-entry
- Poor school attendance of 60% which has negatively impacted her grades (previously strong student).
- Parental stress, considering homebound instruction
- Nurse calls when nausea present
- Less engagement in activities including school, walking, dance, socialization
- Frequent worries about next pain episode

PEDIATRIC DISORDERS OF GUT-BRAIN INTERACTION

~256 million
children worldwide meet criteria for at least one DGBI before adulthood

10-40%
of childhood DGBI cases persist into adolescence and adulthood

1/6
children with DGBI meet criteria for multiple DGBI simultaneously

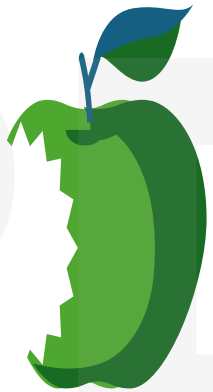
STANDARD MEDICAL CARE COSTS

$25 billion USD per year

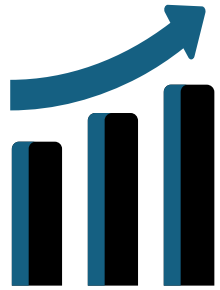
$6000 diagnostic tests

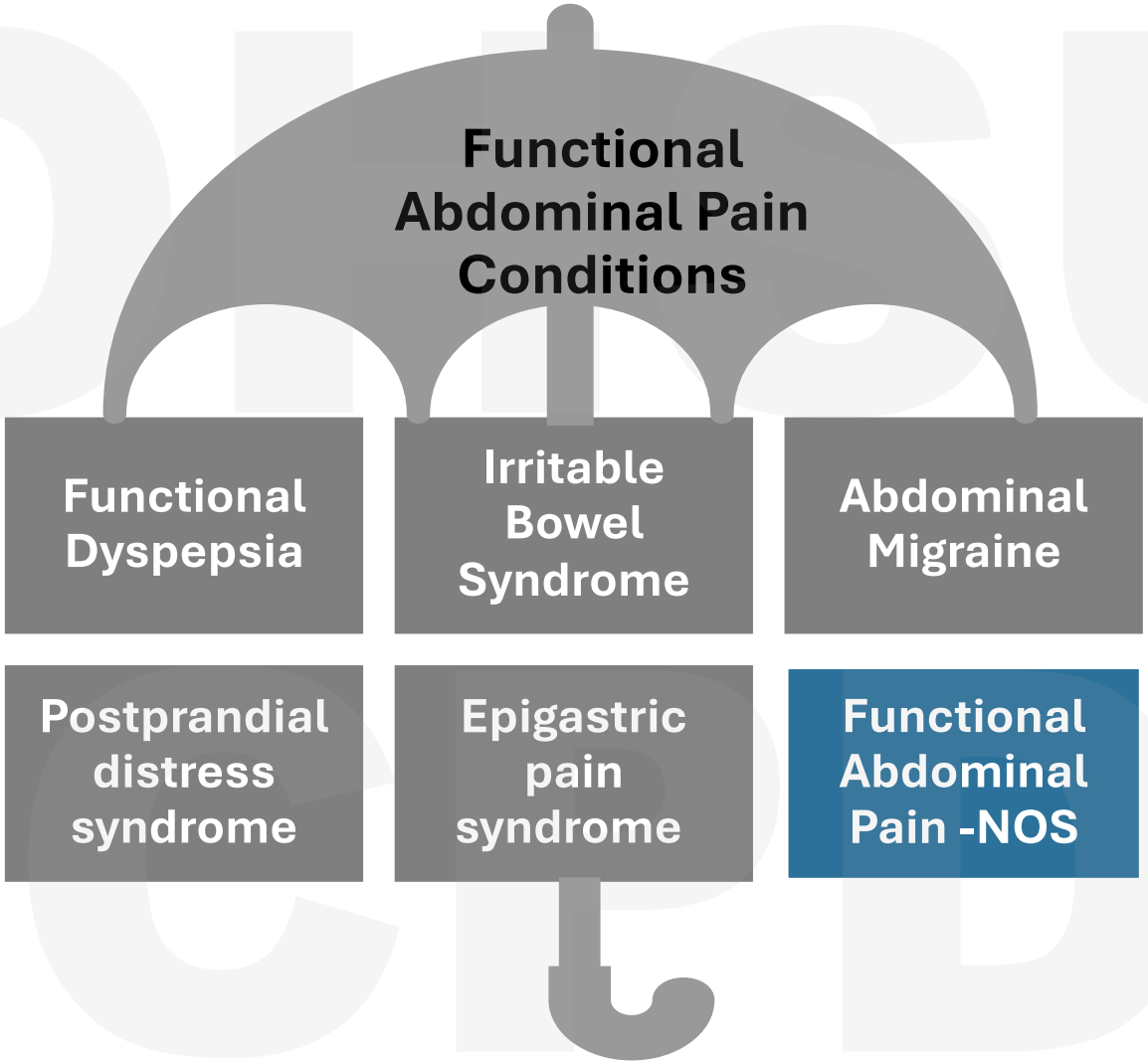
50% greater healthcare use

MISSED
SCHOOL & interrupted CAREGIVER WORK



Due to the COVID-19 **PANDEMIC** and related stressors prevalence is on the rise




Functional Abdominal Pain Conditions
Functional Dyspepsia
Irritable Bowel Syndrome
Abdominal Migraine
Postprandial distress syndrome
Epigastric pain syndrome
Functional Abdominal Pain -NOS

PEDIATRIC FUNCTIONAL ABDOMINAL PAIN

H2d. Functional Abdominal Pain – Not Otherwise Specified

*Diagnostic criteria must be fulfilled at least 4 times per month and include **all** the following:*

1. **Episodic or continuous abdominal pain that does not occur solely during physiologic events** (e.g., eating, menses)
2. Insufficient criteria for irritable bowel syndrome, functional dyspepsia, or abdominal migraine
3. After appropriate evaluation, the abdominal pain cannot be fully explained by another medical condition

>= 2 months prior to diagnosis

PEDIATRIC FUNCTIONAL ABDOMINAL PAIN

- Ill-defined
- Poorly localized or periumbilical pain
- Typically lasting less than an hour at a time
- Resolves spontaneously
- Medications often provide limited relief
- Exacerbated during times of stress

DIAGNOSING FAP: RED FLAG SYMPTOMS

- Bloody stool
- Slowed growth
- Involuntary weight loss*
- Chronic vomiting
- Severe constipation
- Chronic and severe diarrhea
- Persistent right upper or lower quadrant pain
- Unexplained fever
- Family history of IBD

CASE STUDY: KAYLEE

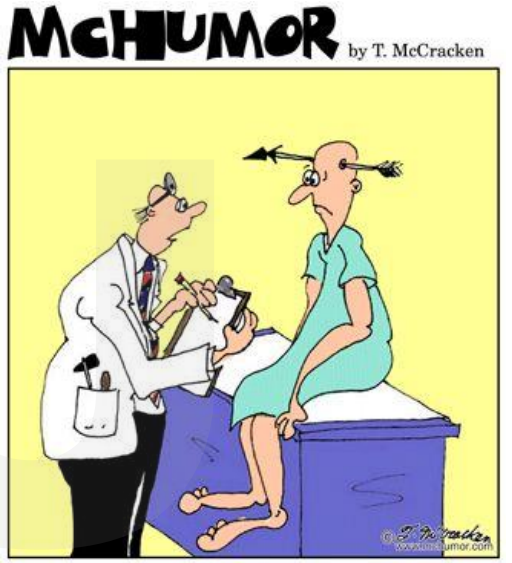
- **Stools**: daily soft stools without blood
- **Growth**: WNL
- **Sxs**: No vomiting or fever.
- History of *headaches* and *generalized anxiety*
- **Fam Hx**: Sibling with suspected DGBI and family history of celiac and ulcerative colitis.
- **Testing**: Due to family history, you order blood serology and fecal calprotectin
- **Test** results normal

FAP: ASSESSMENT & LANGUAGE

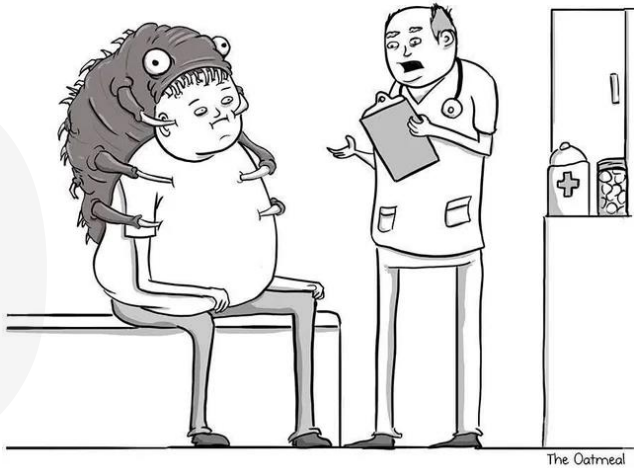
- There are NO objective clinical markers for FAP

- FAP is the result of disruption in communication along the gut-brain axis
- Because the brain is involved in processing signals from the gut, stress often increases nervous system activity

- Symptoms themselves, may be the source of stress, creating a vicious cycle



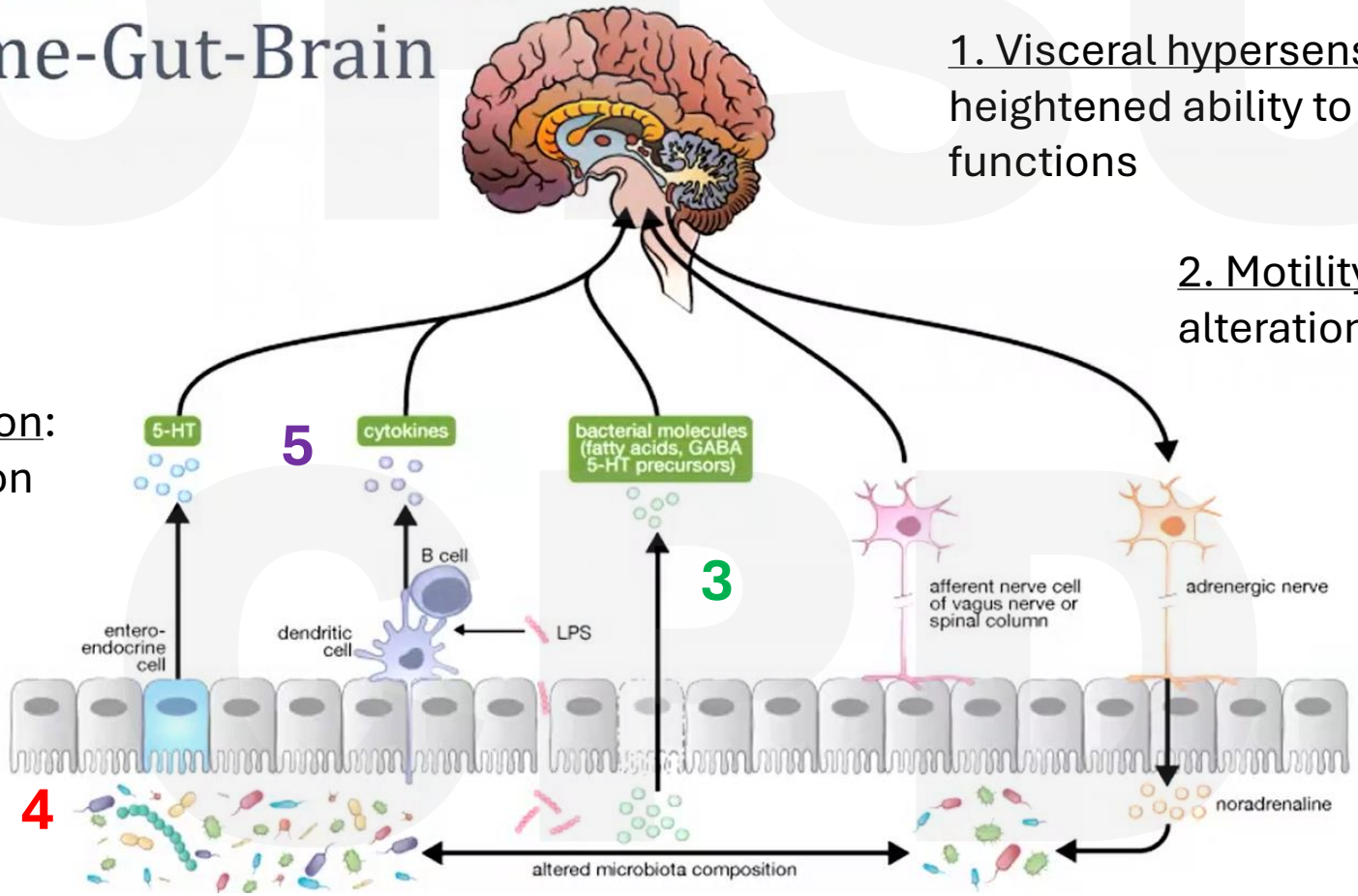
"Off hand, I'd say you're suffering from an arrow through your head, but just to play it safe, I'm ordering a bunch of tests."



"Well, your bloodwork came back fine, so I don't think it's anything we need to worry about."

FUNCTIONAL ABDOMINAL PAIN ETIOLOGY: THE GUT

BiDirectional Communication
Microbiome-Gut-Brain



1. Visceral hypersensitivity: heightened ability to sense gut functions

2. Motility changes: alterations in gut movement

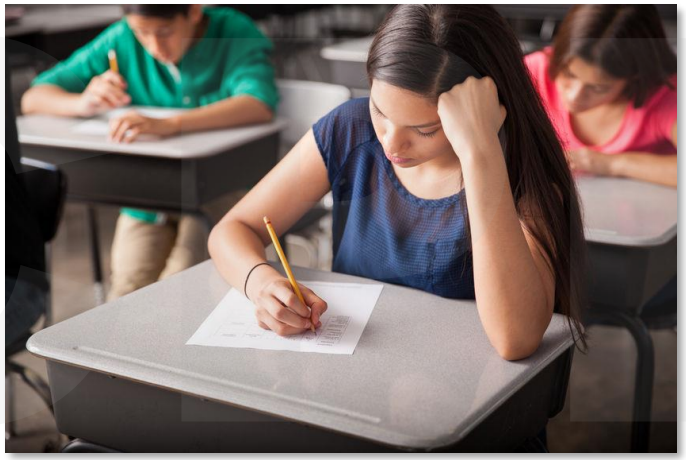
3. Intestinal permeability: weak spots in the gut barrier

4. Dysbiosis: changes in the gut microbes

5. Immune dysfunction: low level inflammation

Slide Credit: Amanda Lee, MD

FUNCTIONAL IMPACT



DEFINITIVE DIAGNOSIS

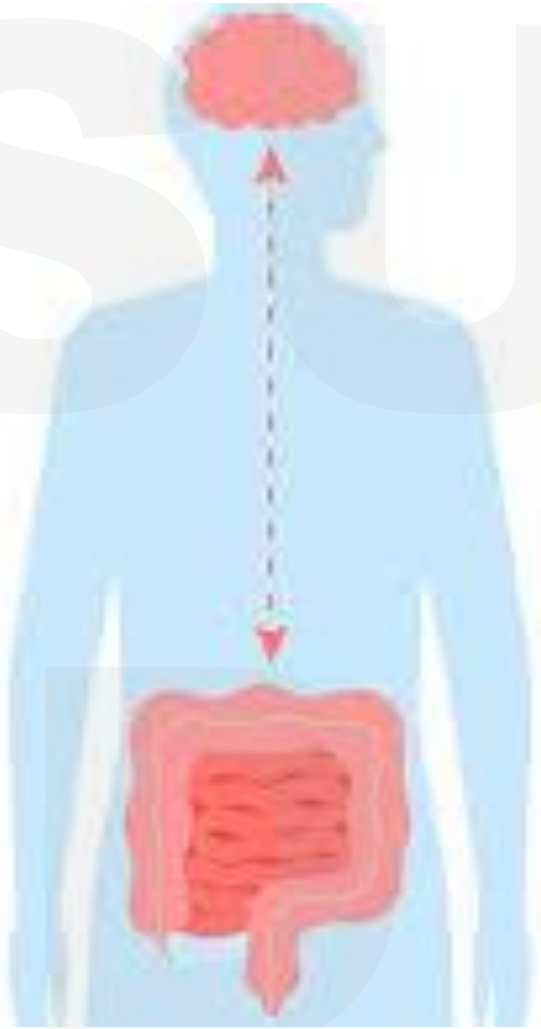


Image Credit: Harvard Health

What you say matters...

"Based on your symptoms, I am confident you have DGBI. I expect your labs and stool test to come back normal, but I am doing due diligence given family history"

"I want you to know that we know what your symptoms are and how to treat them. You have a disorder of gut-brain interaction and many people with this get better."

"I know your symptoms really bother you and get in the way of daily life. I want to talk about some strategies to reduce how much impact your symptoms have on your ability to do what you want to do."

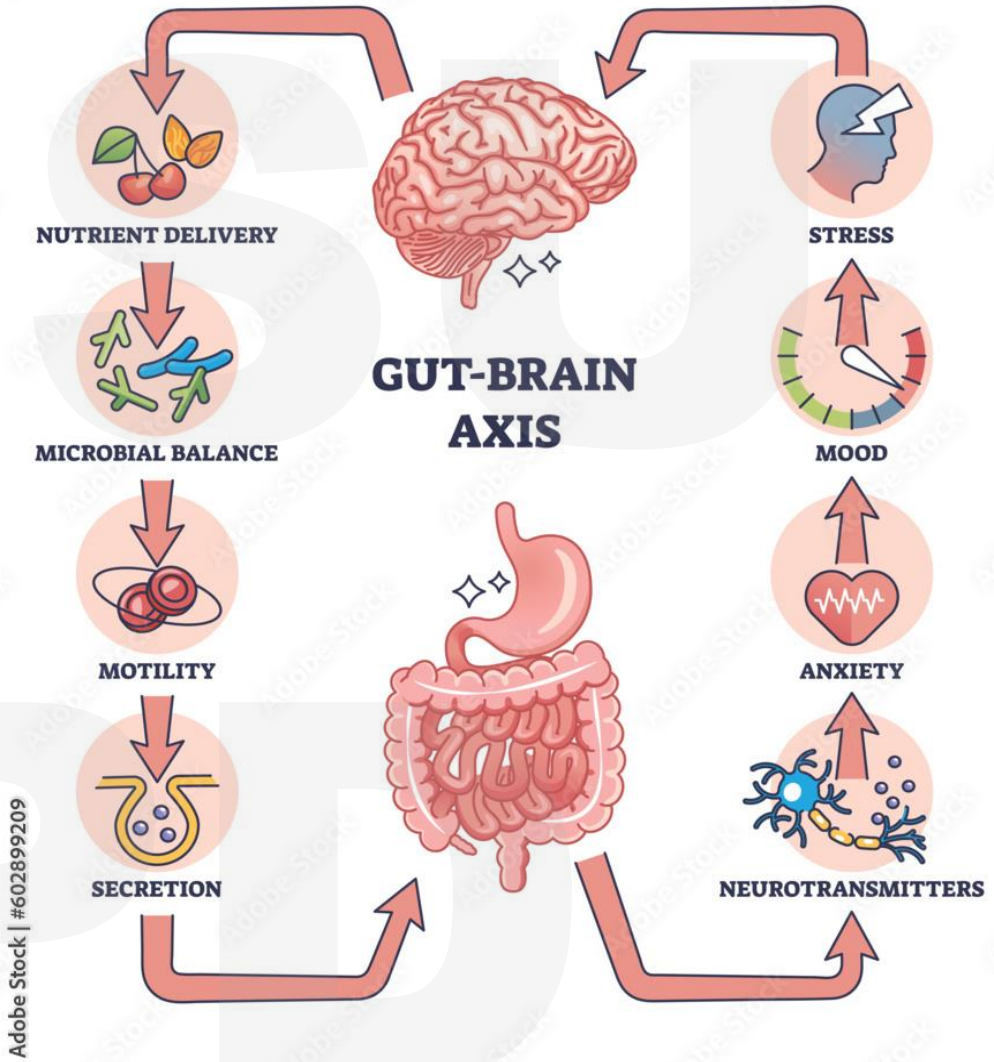
Biopsychosocial Model of Functional Abdominal Pain

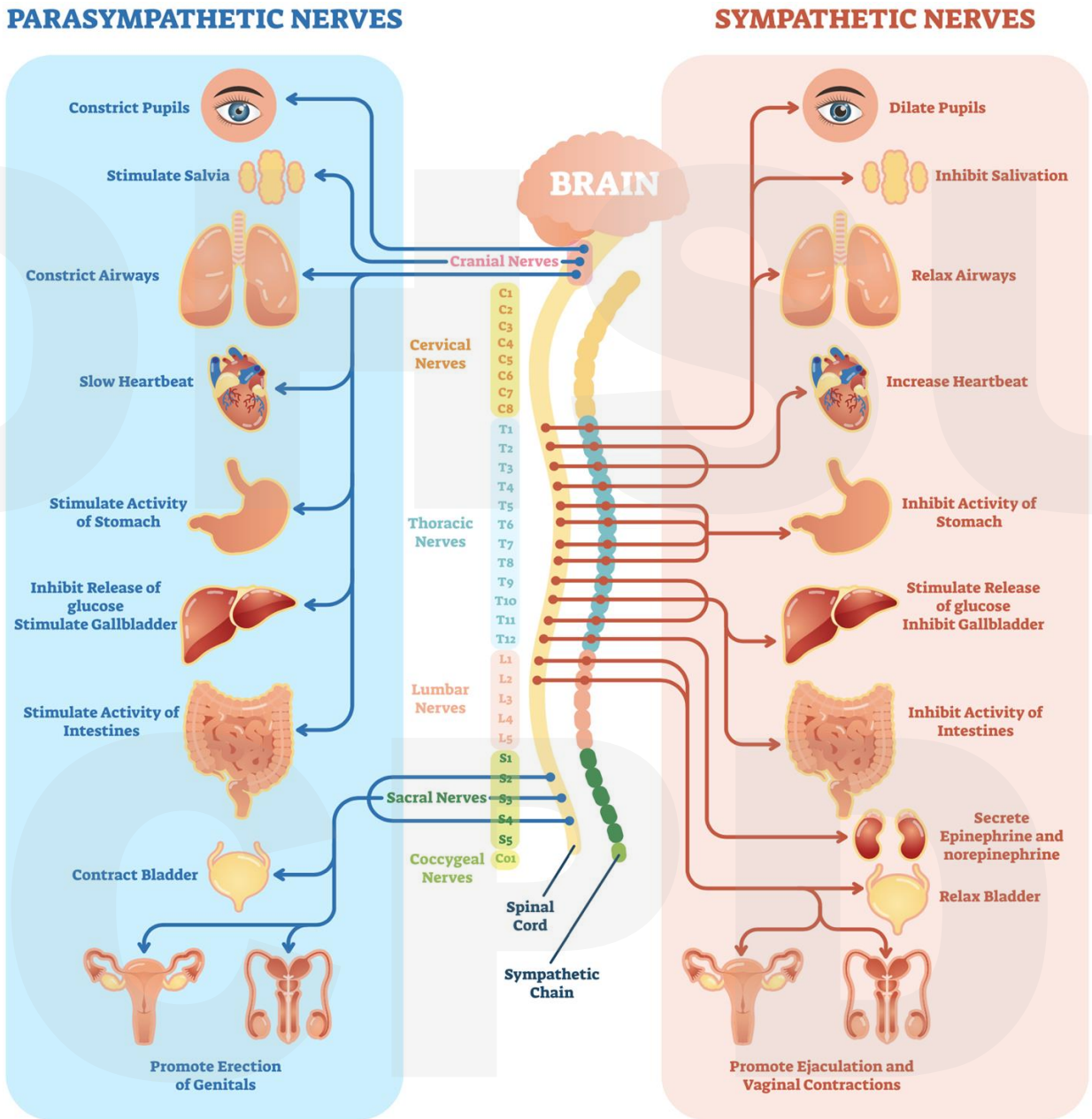
BIOLOGICAL

- Our brain filters and processes sensory information, deciding what is important and what it can ignore
  - Feeling *everything* in your body would not work
- Our brain pays close attention to pain and nausea
    - These act like an alarm system to keep us safe
- But the system can malfunction
  - Sensitive alarm
  - Feeling things that are not important for our safety

BIOLOGICAL

- Health-related factors
  - Viral/bacterial infections (COVID?)
  - Inflammation
  - Antibiotics
  - Environmental pollution
  - Movement/exercise
  - Nutrition
  - Sleep
  - Family history
  - Method of birth delivery
- Neurodevelopmental considerations
  - ADHD
  - Autism
  - IDD





Slide Credit:

Boston Children's Hospital
Where the world comes for answers

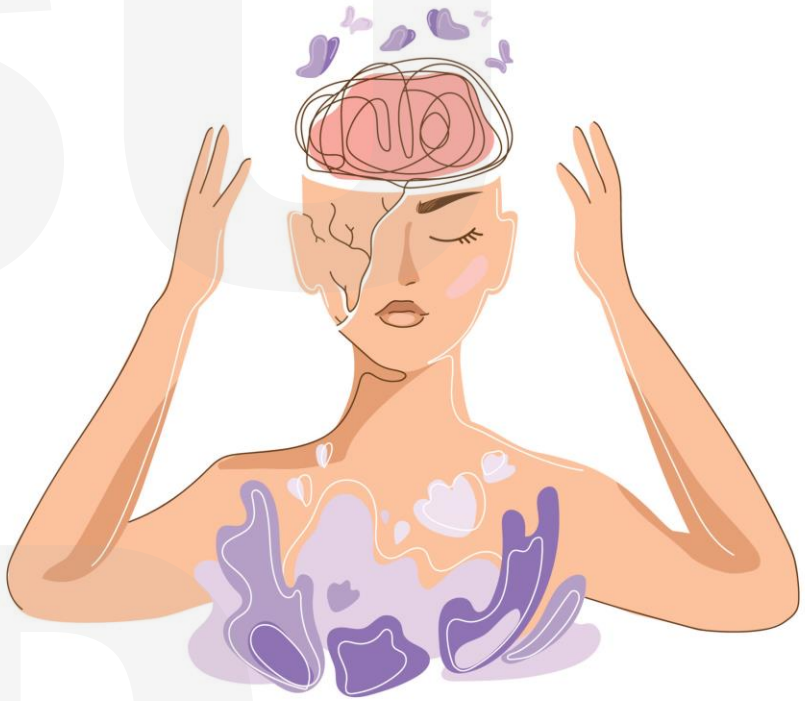
HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

CASE STUDY: KAYLEE

- History of generalized anxiety
- Self-restricts social eating though no food intolerances or delayed gastric emptying
- Missing school and other activities due to worries about possible pain and nausea
- Worries about judgment from friends
- Current coping strategies are passive
- Difficulty falling asleep

PSYCHOLOGICAL

- Psychiatric Comorbidity
  - Anxiety, depression, PTSD
  - ADHD and ASD
  - Somatization
- Stress
- Cognitive Factors
  - Pain/symptom catastrophizing
  - Differences in executive functioning
  - Coping and resilience
- *BGA is bidirectional*



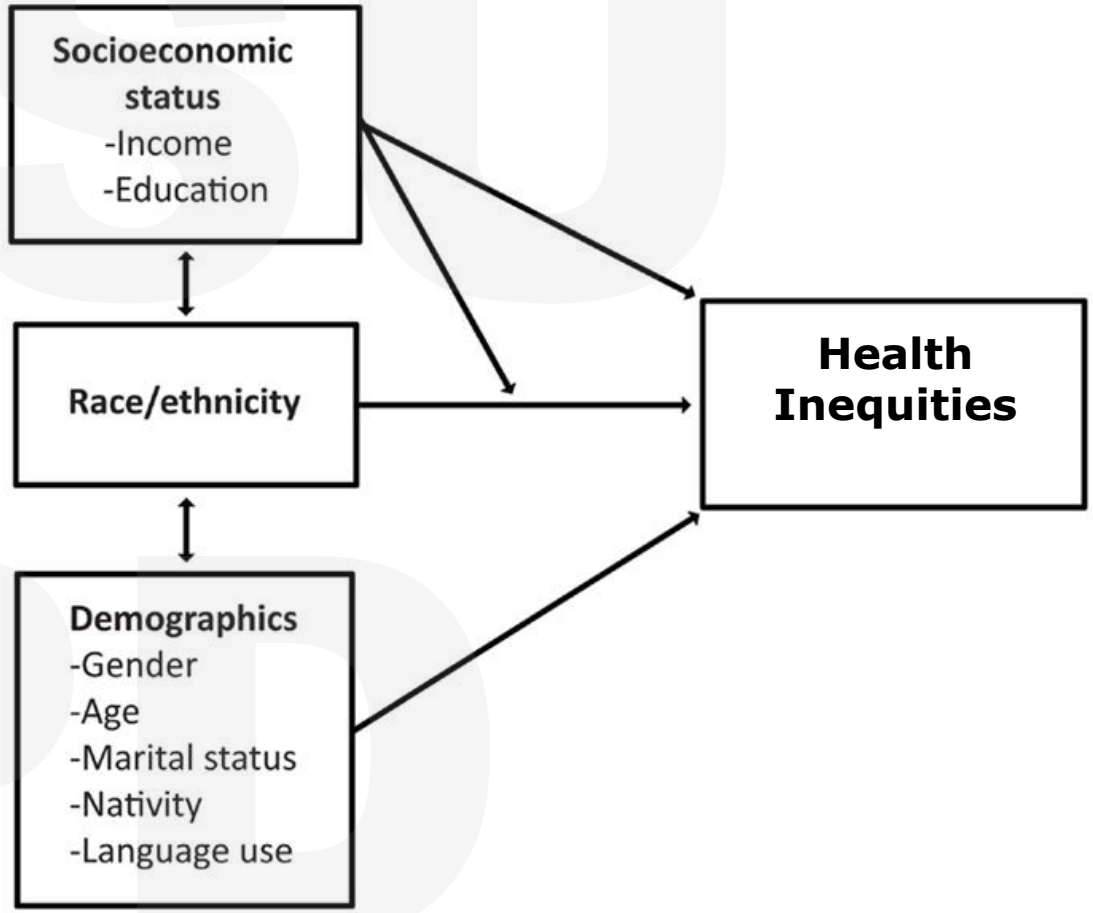
CASE STUDY: KAYLEE

- Family expresses concerns around cost of medical bills
- Family meals consist of cheaper, high-calorie, lower-nutrient, and processed foods
- Kaylee is aware of family stress related to cost of living

PATIENT SUPPORT SURVEY	
How hard is it for you to pay for things like food, housing, medical care, and heating?	Somewhat hard
How often in the last year did you feel worried that you would run out of food before you had money to buy more?	Sometimes
How often in the last year was there a time when the food you bought didn't last until you had money to buy more?	Never true
Have you had to skip doctor visits or not get your medicine because you had no way to get there?	Yes
Has not having transportation kept you from meetings, work, or from getting things you need for daily life?	No
In the last 12 months, was there a time when you were not able to pay the mortgage or rent on time?	No
In the past 12 months, how many times have you moved where you were living?	0
At any time in the past 12 months, were you homeless or living in a shelter (including now)?	No
We make community resources available to all of our patients to assist with everyday needs. We may be able to connect you with those resources. Would you be interested?	Yes

SOCIAL

- Health **disparities**
  - Access to nutrition
  - Access to treatment
  - Systemic oppression
- **Relationships**
- **Caregiver accommodation**
- Minority **stress**
- *Social factors can be the source of stress or resilience and shape experience of DGBI*



CASE STUDY: KAYLEE

- Parents worry school will exacerbate pain or be unmanageable for Kaylee
- Frequent calls from school to pick her up
- Parents have missed work and are stressed about medical bills
- Considering homebound education and want a letter to support this

SOCIAL

CAREGIVERS (Lamparyk et al 2023)

- "Solicitous" & protective behaviors
- Illness behaviors reinforced by caregivers – ↑ missed school / ↑ pain severity
- Pain behaviors in parents (e.g., grimacing, moving slowly) → ↑ pain and pain interference (Stone & Walker, 2016)
- Parent-directed CBT; social learning theory
  (Levy et al. 2017; van Tilburg et al, 2021) * Sustained at 6- and 12-months
  - ↓ parental check-ins, fears
  - ↓ child functional disability & healthcare visits

SOCIAL

Schools- Supporting school engagement

- Regular schedule supports school engagement
- Caregivers and teachers benefit from guidelines around school attendance
- 504 Planning to *foster* engagement

GI Kids Help & Hope for Children with Digestive Disorders www.GIKids.org

School Accommodations for Pain-Predominant Functional Gastrointestinal Disorders

The symptoms of pain-predominant functional gastrointestinal disorders (p-FGIDs) or "functional abdominal pain disorders" can be unpredictable and may vary in severity. There are four types of p-FGIDs: functional abdominal pain syndrome, irritable bowel syndrome, functional dyspepsia, and abdominal migraines. Common symptoms include abdominal pain, nausea, vomiting, diarrhea, and/or constipation. These conditions are chronic, and their symptoms often wax and wane.

Children with p-FGIDs may miss school for medical appointments, illness, symptom flare-ups, and side effects of treatment. It is important for children to remain engaged in their normal daily activities, including attending school, even during symptom flares. However, students may need tailored support to help them manage their symptoms while at school and reduce absenteeism. Often this type of support is sought via a formal accommodation plan called a "Section 504 Plan".

What is a Section 504 Plan?

- Section 504, part of the Rehabilitation Act of 1973, is a civil rights act that protects the civil and constitutional rights of persons with disabilities.
- A Section 504 Plan is an action plan developed by the school, parents/guardians, and student. The plan attempts to prohibit discrimination against students with disabilities so that they may achieve their academic goals. The plan should contain a list of accommodations or adjustments required to ensure that a child with a chronic medical condition is treated fairly and has the same access to education as other students. This

REDUCING ACCOMMODATION

- Help parents understand when care is needed
- Promote engagement in valued or important activities
- Reduce symptom check-ins
- Limit parent attention to minor and nonverbal complaints

TARGETS OF PSYCHOSOCIAL TREATMENT

Education & Orientation

Biopsychosocial model

Psychosocial factors

Functional Restoration

Activity Pacing

Reduce Accommodation

Return to school

Nervous System Regulation

Relaxation

Coping Strategies

Stress management

Cognitive Strategies

Gut specific anxiety

Cognitive distortions

Mindfulness

FUNCTIONAL RESTORATION

- Balanced and paced activity
- Short and intentional breaks with active use of "wind down" strategies
- "House Rules" for wellness behaviors and physical activity
- Daily schedule and SMART goals to increase activity

TYPES OF PSYCHOSOCIAL TREATMENT

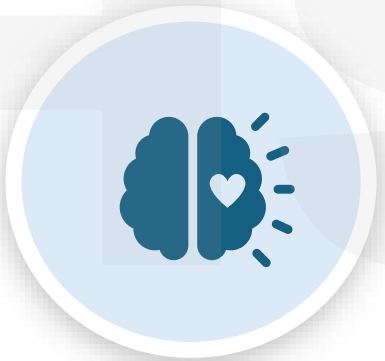
Cognitive Behavioral Therapy

Orientation & education

Modify maladaptive behaviors

Challenge cognitive errors

Relaxation Techniques



Acceptance & Commitment Therapy

Orientation & education

Increase engagement in activities

Disengage from unhelpful thoughts

Mindfulness

Clinical Hypnotherapy

Orientation & education

Improve psychological factors

Reduce visceral hypersensitivity

Reduce inflammatory response

HOW MEDICAL PROVIDERS CAN ADDRESS

Diagnostic Education

Clear diagnosis and education about the GBA and role of psychosocial factors

Cognitive Micro-Interventions

Cognitive behavioral micro-interventions
(see resources)

Motivational Interviewing

Utilizing MI to support patients and families in reducing accommodations

KAYLEE'S STORY

- Kaylee and family were relieved to about a diagnosis and treatment plan
- Practiced relaxation skills nightly to help "wind down" her nervous system
- A 504-plan supported engagement in school
- Kaylee's doctor helped identify alternative/helpful thoughts when worried about pain
- A paced activity plan was made to gradually increase's Kaylee's activity
- Kaylee's family also made house rules to go on a family walk to help "recondition" their bodies
- Family received social supports including medical transportation and affordable healthy food resources

Questions?

RESOURCES

Functional Abdominal Pain Education

- https://www.ohsu.edu/doernbecher/pediatric-chronic-abdominal-pain
- https://gikids.org/digestive-topics/functional-abdominal-pain/

Relaxation Strategies for Nervous System

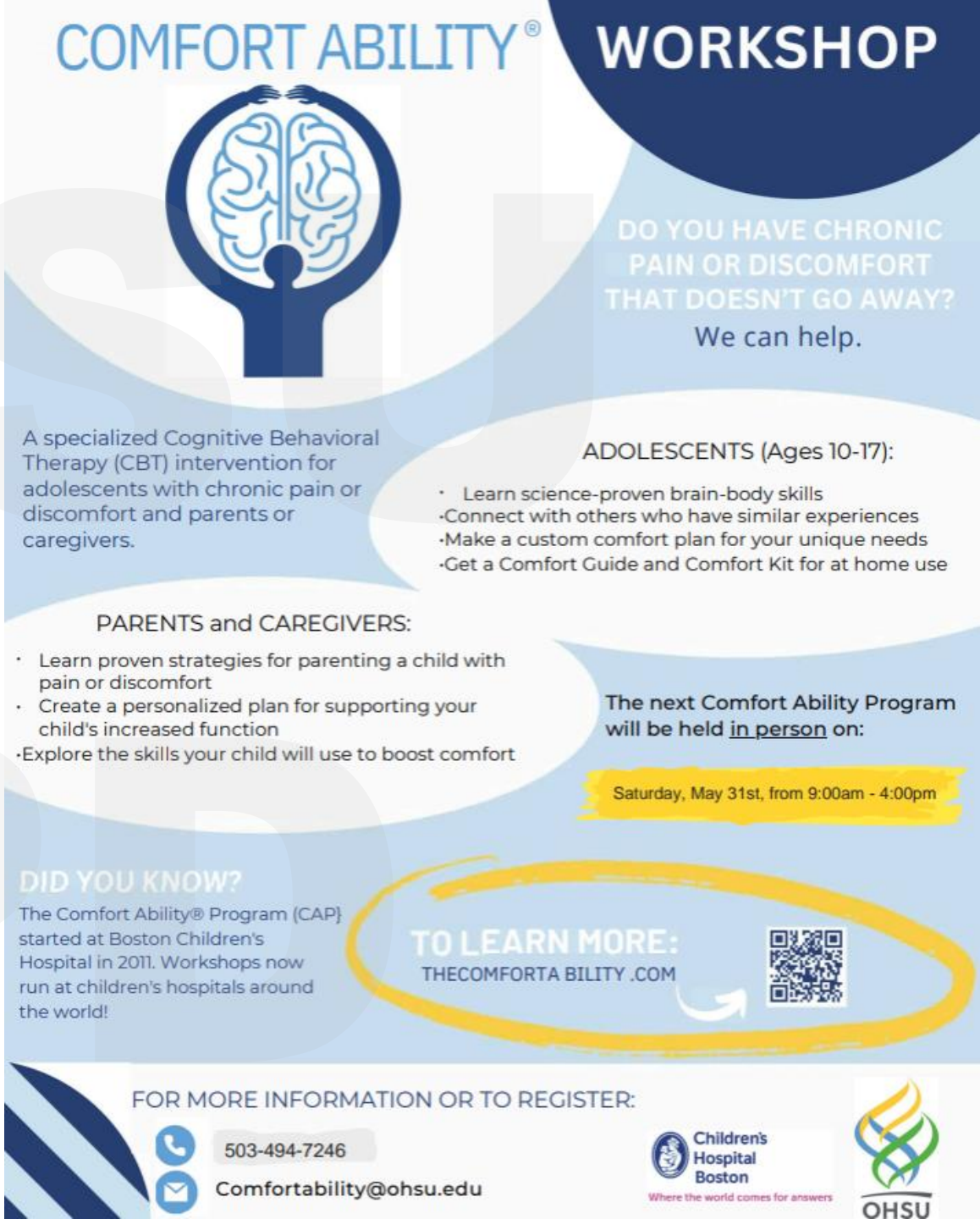
- Diaphragmatic Breathing: https://youtu.be/8rQB3VxjXsI
- Progressive Muscle Relaxation: https://youtu.be/87buSvmaP4s

Guided Imagery for Pain

- https://imaginaction.stanford.edu/manage-my-chronic-pain/
- https://www.thecomfortability.com/blogs/guided-exercises-relaxation/guided-imagery-for-pain-relief

Rome Psychogastro

- https://theromefoundation.org/patient-educational-q-a/



RESOURCES: COGNITIVE RESTRUCTURING

Cognitive Distortion	Definition	Example Thoughts	Possible Responses	
Catastrophizing	Assuming the worse outcome or exaggerating the possible negative outcome	I will never get better. It will always be this hard to manage my symptoms.	It may help you to know that I see many other youths with this same condition, and many of them get a lot better. How do you know your symptoms will not get any better?	I hear how hard it has been to manage your symptoms, and it is difficult to imagine it being another way in the future. Lots of patients think of worst-case scenarios that often are not true.
Emotional Reasoning	Treating feelings, particularly those with strong valence, as fact	Because I'm worried/anxious, something bad will happen. I feel so horrible, something must be wrong.	It is understandable to worry about something being wrong when you have recurrent nausea. The evaluation shows us you have a disorder of gut-brain interaction, and nausea is caused by a miscommunication between your brain and gut. We have treatments to alleviate this feeling, even though we know your body is healthy.	There are lots of reasons we can experience bloating. Let's think of all of the things that could contribute to bloating, many of which are not harmful.
Personalization	Attributing blame to oneself for things not in your control	Not responding to my treatment means I have failed.	There is more than one way to treat inflammatory bowel disease and sometimes we try a few different treatments to get to remission. That is not your fault.	While constipation often responds to lactulose, it is normal that we sometimes add another type of medication.
		Parent: "I failed my child because I cannot relieve their pain."	All parents want to protect their children from pain. Your child's pain is not your fault, but you can help them to manage it with a few strategies.	I noticed you blamed yourself for your child's pain. I'm not sure I understand how you caused their abdominal pain. Can you tell me more about this?
Jumping to Conclusions/ Fortune Telling	Predicting the future, often inaccurately, based on a negative emotional state or past experiences	I will never get better. It will always be this hard to manage my symptoms.	I have heard you express how hard things are right now. I know it doesn't feel like it, but I think we can get you back to feeling better. What is telling you that it will never get better?	Can you remember a time when you felt better? What did that look like? What's to say that won't happen again?

Low Kapalu et al., In Press

RESOURCES: COGNITIVE RESTRUCTURING

Cognitive Distortion	Definition	Example Thoughts	Possible Responses	
All or NoneThinking	Assuming situations, people, etc. are all good or all bad without any gray area	If I can't get rid of the pain, what is the point of treatment? Because it (eating, drinking, school, exercise) made my symptoms worse, I have to avoid them.	We will work together to help reduce your pain and improve your daily life. While it can be hard to think of things in shades of gray (some good days, some hard days), that's often how treatment goes. Are there things you enjoy doing that you currently feel you can't? Perhaps we can think of ways to gradually get back to those.	Our brain's job is to protect us from negative outcomes. You had more symptoms when you ate X that one time. So, your brain tried to form a rule about that food. Unfortunately, if you avoid that food forever, it only proves your brain right and you will never know if you can enjoy that food.
Disqualifying the positive/ Minimization	Discounting information that is positive and in conflict with your belief about something or someone.	Even though I feel good right now, I'm just waiting for the other shoe to drop.	Because of your past experiences with symptoms, it is reasonable to be worried about the future. How might predicting negative things in the future impact how you are feeling right now?	Let's use this period of feeling better to learn about you and your body. What did you learn about your body? What makes it feel better? What makes it feel worse?
Mind Reading	Assumption that you know what others are thinking without them telling you	They will absolutely notice if I get up and go to the bathroom again during this movie. They will think I'm gross.	Emotions tell us what we care about. It sounds like you really care about your friends. How do you think they feel about you?	If the tables were turned and your friend had symptoms, what would you think about them? What would you say to them?
Over-generalization	Using one negative event to predict all current or future events	I can't live a normal life My illness defines me	You said you feel like you can't live a normal life. What is the evidence you have that would support not being able to live a normal life? Evidence against?	Your illness/condition is one part of you. What are some of the other parts of you? How do you show those parts?

Low Kapalu et al., In Press

Thank You

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