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Making Sense of Symptoms:

A Practical Approach to Pediatric Somatic Symptom and Related Disorders

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Disclosures

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- I have no actual or potential conflicts of interest to disclose

Objectives

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- Describe common presentations and warning signs of Somatic Symptom and Related Disorders (SSRDs) in children and adolescents.
- Apply practical strategies to differentiate SSRDs from medical conditions using a biopsychosocial framework.
- Identify effective, evidence-based interventions and referral options to support pediatric patients and families coping with SSRDs.

Case Vignette

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Lila – 14yo F (9th grade)

Presenting Concerns:

- 10-month history of daily abdominal pain, headaches, and fatigue, which intensified over the past semester.
- Missed ~30% of school days due to symptoms and often visited the school nurse when attending.
- Multiple evaluations—including GI endoscopy, MRI, and bloodwork—were unremarkable.

- **Medical History:** occasional constipation, well managed no significant injuries or surgeries
- **Psychosocial History**:
  - 9th grade, honors student
  - Competitive swimmer
  - Symptoms began after BFF moved away, start of high school
  - Denied history of anxiety, mood concerns
- **Family History**:
  - Lives with both parents
  - Maternal depression, IBS

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Recognizing Somatic Symptom and Related Disorders (SSRDs in Pediatrics

Impact of diagnosis

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Increased Healthcare Utilization

- Average ED visit:
  - Symptoms for 7 weeks
  - Missed ~22 days of school
- High physical disability and disruption to life
  - Medical interventions often do not provide relief
- Risk for incorrect treatment (unnecessary tests, meds)

Functional Impairment

- High rates of ED visits and inpatient stays
- High healthcare costs compared to other disorders
- Often seeking multiple opinions
  - Often do not receive mental health care

Related Functional Difficulties

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Parents/Family:

- Missed work
- Reduce income
- Managing siblings
- Disrupted family functioning
- Feelings of alienation

Individual:

- 80% struggle with sleeping
- 50% struggle with school
- Decrease in valued activities, hobbies, or social events, physical activities
- Difficulties concentrating
- Long-term risk for disability
- 2-3x more likely to develop anxiety or depression
  - Increased risk of suicidality

Functional Somatic Disorders

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Some examples:

- Disorders of gut-brain interaction
  - Irritable Bowel Syndrome
- AMPS
- Autonomic dysfunction
- Fibromyalgia
- Chronic Pain Disorders
- Functional Neurological Disorder
- Symptoms are a result of problem in body-brain communication
  - E.g., overly sensitive pain signaling system

Somatic Symptom and Related Disorders (SSRD)

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- **Functional Neurological Symptom Disorder (formerly Conversion Disorder)**
- **Somatic Symptom Disorder**
- Illness Anxiety Disorder
- Psychological factors affecting a medical condition
- Factitious Disorder (formerly Munchausen's)
- Malingering

SSRDs vs. Functional Somatic Disorders

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- A child or adolescent may have:
  - An FSD without an SSRD.
  - An SSRD without an FSD.
  - Both simultaneously.

Functional Neurological Symptom Disorder (previously Conversion Disorder)

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A. Altered Motor or Sensory Function – 1+ symptoms present
   A. *Motor*: tremors, weakness, paralysis, stiffness, involuntary movements, gait disorders, seizure-like episodes
   B. *Sensory*: numbness, tingling, altern sensation, sensory loss
   C. *Other*: difficulty speaking, vision disturbances, dizziness, cognitive complaints
B. Incompatible clinical findings – symptoms are not compatible with known neurological or medical conditions
C. Not better explained by another medical diagnosis or mental health diagnosis
D. Clinically significant distress or impairment

Somatic Symptom Disorder

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A. Persistent somatic complaints – 2+ distressing or life-impairing somatic symptoms
    A. Pain, fatigue, GI problems, pseudoneurological symptoms
B. Excessive thoughts, feelings, and behaviors related to symptoms
    A. Preoccupation with symptoms
    B. High anxiety about symptoms
    C. Excessive time and energy spent on symptoms or health concerns
    D. Help-seeking behaviors
C. Symptoms not fully explained by a known medical condition, or from substance
D. Symptoms cause significant distress or impairment

Illness Anxiety Disorder

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A. Preoccupation with having or acquiring a serious illness
B. Somatic symptoms are not present or mild
C. High level of anxiety about health and easily alarmed about personal health status
D. Performs excessive health-related behaviors or exhibits maladaptive avoidance
E. Present for at least 6 months (but the feared illness may change)
F. Not better explained by other mental health disorder
G. Specifiers: *care-seeking* or *care-avoidant* types

Psychological Factors Affecting Medical Condition

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A. Presence of medical condition

B. Psychological or behavioral factors adversely affect the medical condition by potentially
    A. interfering with treatment,
    B. increasing health risk,
    C. influencing underlying pathophysiology, and/or
    D. close temporal association between these factors and exacerbation of illness

C. Specifiers: mild, moderate, severe, extreme

Factitious Disorder (imposed on self or another)

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A. Falsification of physical or psychological symptoms
    A. Intentionally produces, exaggerates, simulates, induces symptoms
B. Motivation to assume the sick role – obtain attention, sympathy, or care from others by presenting as ill
C. Absence of external incentives (financial compensation, avoid legal consequences, etc.)
D. Exclude other mental health disorders

→Inconsistencies in patient's history/records

→Evidence of deception (vs focus on motivation)

→NO evidence-based interventions for factitious disorder!

Malingering

A. Falsification of physical or psychological symptoms

   A. Intentionally produces, exaggerates symptoms

- Motivated by clear external benefits
  - Financial gain
  - Avoiding school, work
  - Evading criminal prosecution
  - Obtaining drugs or attention

→ Inconsistencies in patient's history/records and objective findings

→ Lack of cooperation with evaluation process or nonadherent to treatment

→ Antisocial personality disorder

Distinctions

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Somatic Symptom Disorders

- Focus on thoughts, feelings, behaviors related to physical symptoms
- Distress is out of proportion to the symptoms
- Symptoms are often non-specific
- Undergo many diagnostic tests, and anxiety remains high even in light of normal testing

Functional Somatic Disorders

- Dysfunctional nervous system response
  - "Software" problem
- Undergo many diagnostic tests

Challenges with the mind-body connection

Risk Factors for SSRDs

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- Adverse Childhood Events (ACEs)
- Stressors
- Mental health symptoms (anxiety, depression)
- Female
- Adolescent
- Emotional dysregulation
- Family Dysfunction
- Comorbidites (medical and mental health)
    - Including sudden illness

1 in 9 children
in primary care have SSRD or functional somatic symptom disorders

“True” representation of somatic symptoms?

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Underserved, minoritized populations show higher rates of chronic pain/somatic symptoms

Consider *access* to care

Who is seeking medical attention for symptoms?

Who is referred for a more testing/specialized care?

Perception of symptoms may differ across cultures

Are symptoms misunderstood as something else?

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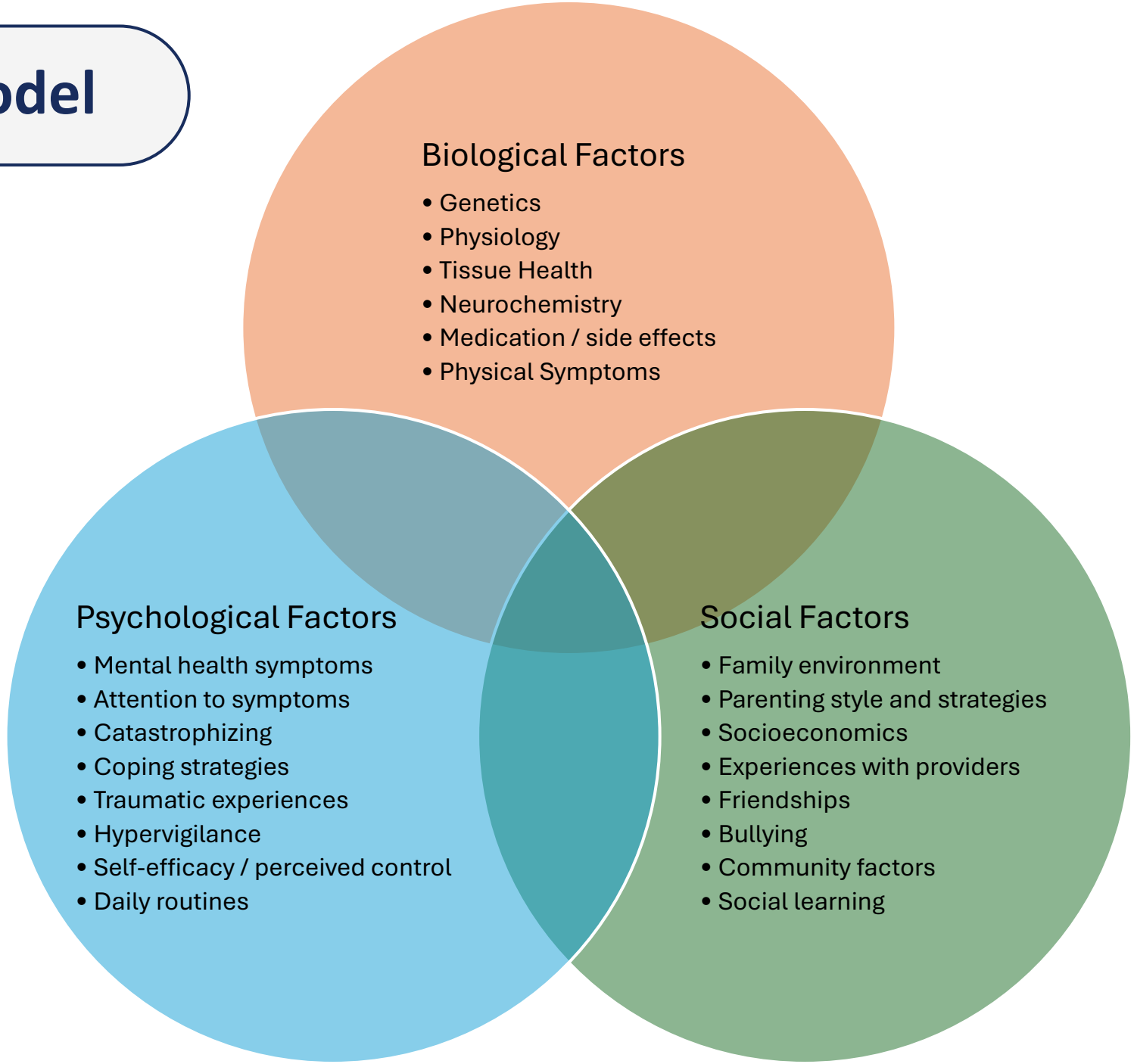
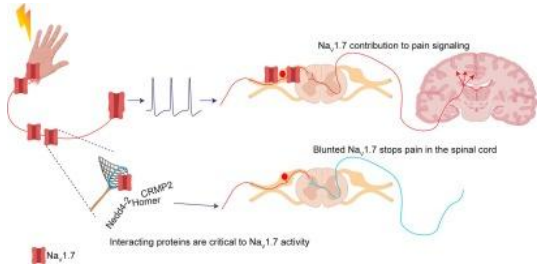
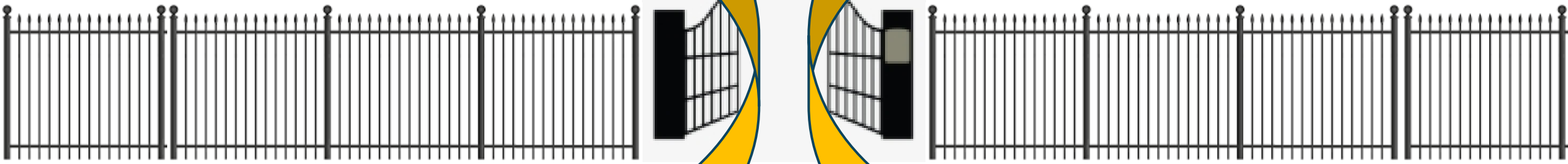
Assessment

Biopsychosocial Model

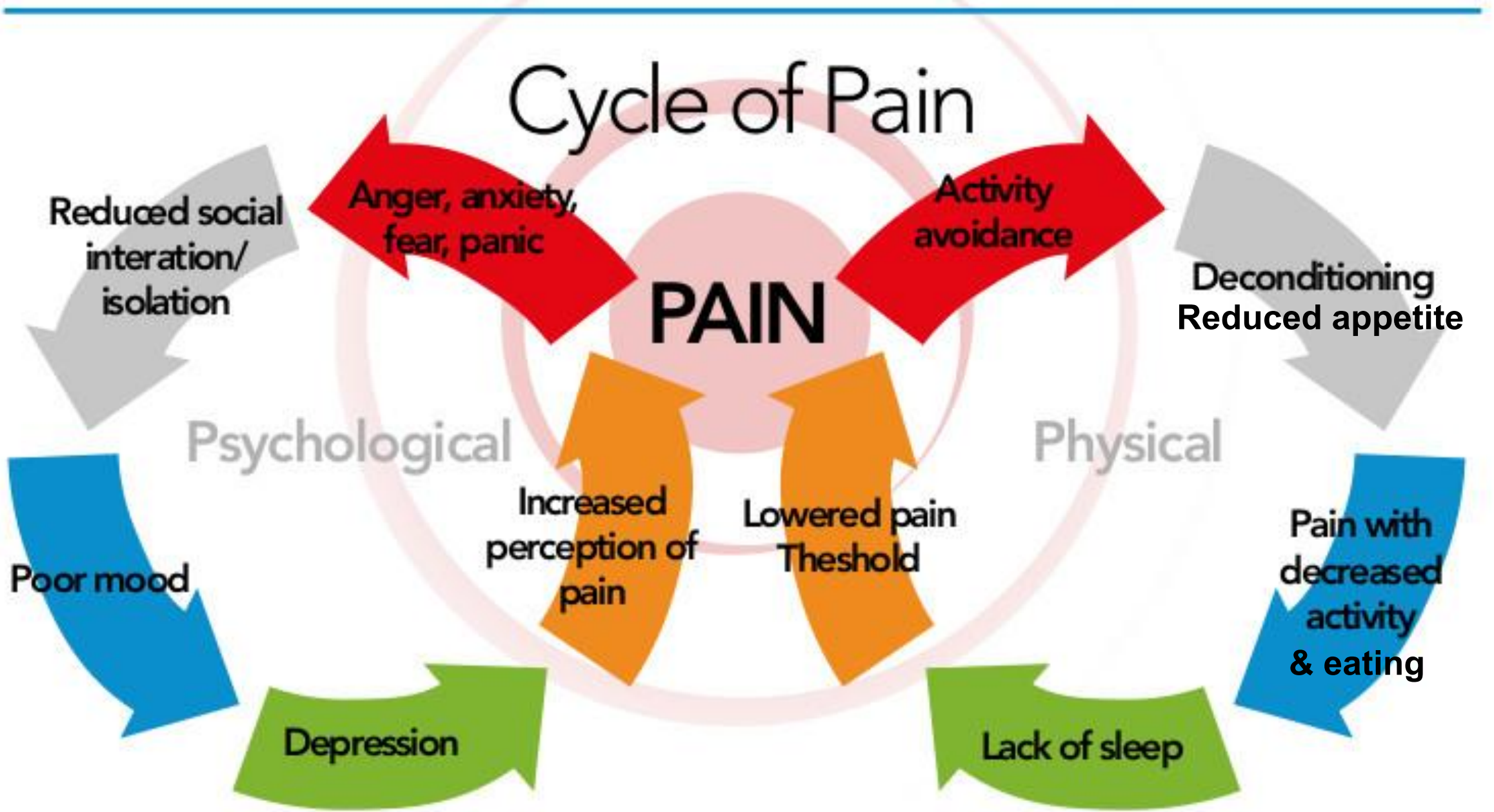



Na$_v$1.7 contribution to pain signaling
Blunted Na$_v$1.7 stops pain in the spinal cord
CRMP2
Homer
Interacting proteins are critical to Na$_v$1.7 activity
Na$_v$1.7


NOPE.



SYMPTOMS


Cycle of Pain
Reduced social interation/ isolation
Anger, anxiety, fear, panic
Activity avoidance
Deconditioning
Reduced appetite
PAIN
Psychological
Physical
Increased perception of pain
Lowered pain Theshold
Poor mood
Pain with decreased activity & eating
Depression
Lack of sleep

Medical Assessment

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- Assess symptoms
  - Rule out serious and benign factors of somatic symptoms
  - Walk the line of completing needed diagnostic testing with caution about unnecessary or invasive testing
  - Caregivers may be invested in identifying “something serious” or “something being missed”
- Evaluation guided by:
  - History – how the symptoms “add up”
  - Collateral information – other clinicians, school staff, other family members
- Give a positive diagnosis of SSRD! Talk about the mind-body connection!
  - Avoid temptation to focus on what it is not
- Many with SSD have an underlying medical condition

+ Mental Health Assessment

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- Early mental health assessment/consultation is key!
  - Normalizes the psychological and social factors influencing somatic symptoms
  - Identifies the mental health clinician as part of a multidisciplinary team
  - Reduces perception that symptoms are “all in their head”
- Youth with SSDs often present to medical settings (vs mental health settings)
- Youth with SSDs are significantly more likely to have anxiety, depression, and externalizing challenges

Children's Somatic Symptom Inventory - 8

Children's Somatic Symptoms Inventory – 24 item

Below is a list of symptoms that children and teenagers sometimes have. Circle a number telling how much you were bothered by each symptom during the past two weeks.

In the last 2 weeks, how much were you bothered by each symptom?

	Not at all	A little	Some	A lot	A whole lot
1. Pain in your stomach or abdomen (stomach aches)	0	1	2	3	4
2. Headaches	0	1	2	3	4
3. Pains in your lower back	0	1	2	3	4
4. Faintness or dizziness (feeling faint or dizzy)	0	1	2	3	4
5. Pain in your arms or legs	0	1	2	3	4
6. Your heart beating too fast (even when you're not exercising)	0	1	2	3	4
7. Nausea or upset stomach (feeling like you might throw up, or having an upset stomach)	0	1	2	3	4
8. Weakness (feeling weak) in parts of your body	0	1	2	3	4

Functional Disability Inventory

When people are sick or not feeling well it is sometimes difficult for them to do their regular activities. In the past two weeks, would you have had **any physical trouble or difficulty doing these activities?**

	No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
1. Walking to the bathroom.	0	1	2	3	4
2. Walking up stairs.	0	1	2	3	4
3. Doing something with a friend. (For example, playing a game.)	0	1	2	3	4
4. Doing chores at home.	0	1	2	3	4
5. Eating regular meals.	0	1	2	3	4
6. Being up all day without a nap or rest.	0	1	2	3	4
7. Riding the school bus or traveling in the car.	0	1	2	3	4
Remember, you are being asked about difficulty due to physical health.					
8. Being at school all day.	0	1	2	3	4
9. Doing the activities in gym class (or playing sports).	0	1	2	3	4
10. Reading or doing homework.	0	1	2	3	4
11. Watching TV.	0	1	2	3	4
12. Walking the length of a football field.	0	1	2	3	4
13. Running the length of a football field.	0	1	2	3	4
14. Going shopping.	0	1	2	3	4
15. Getting to sleep at night and staying asleep.	0	1	2	3	4

Mental Health Measures

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- Anxiety:
  - SCARED
  - GAD-7
  - PROMIS-Anxiety
- Depression
  - PHQ-A
  - CES-D
  - PROMIS-Depression
- ADHD
  - Vanderbilt
- Sleep
  - PROMIS – Sleep Interference
- General Screening
  - Pediatric Symptom Checklist
  - Strengths & Difficulties Questionnaire

https://mdbhipp.org/resources/screening-tools/

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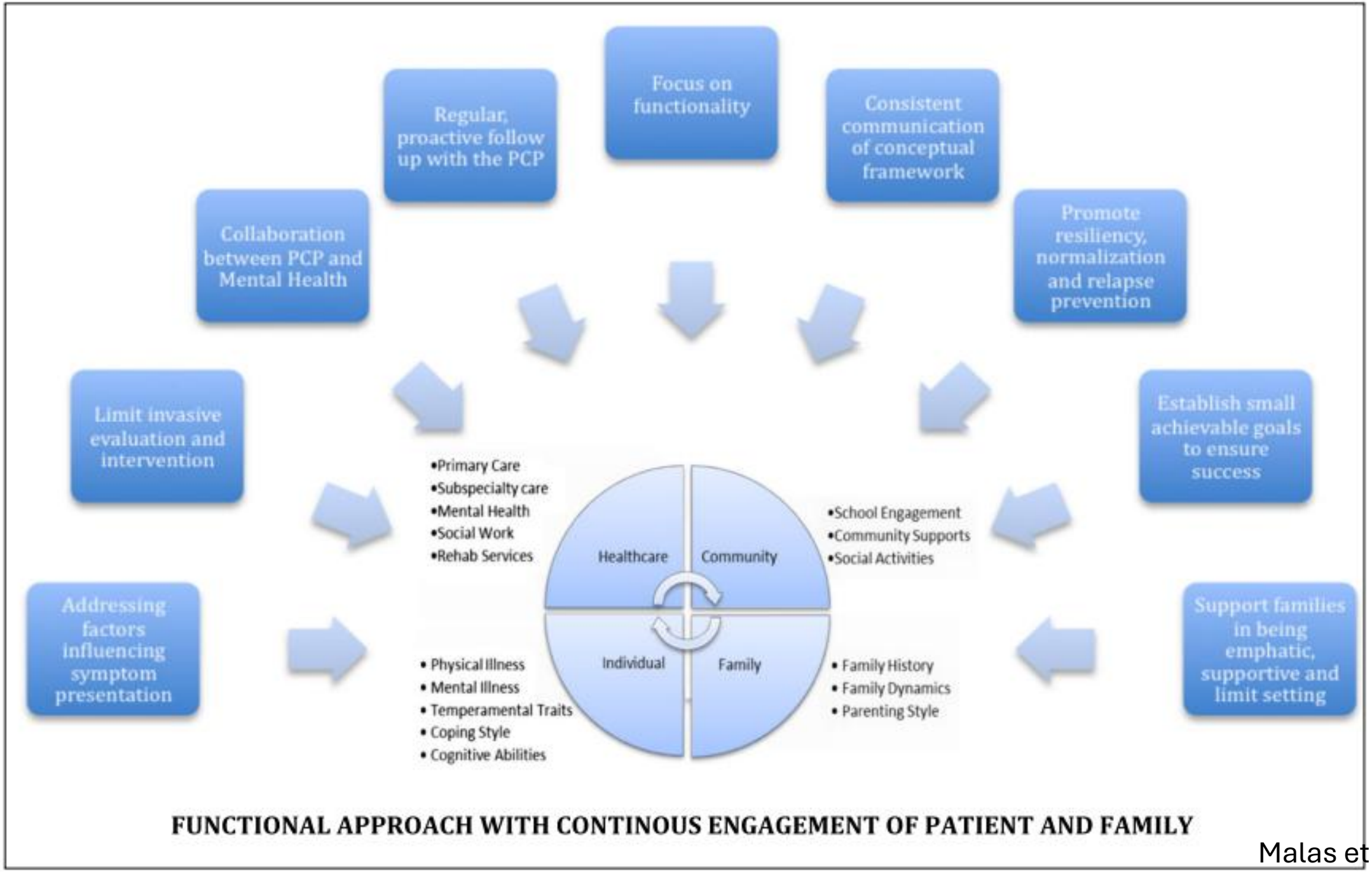
Management & Intervention



FUNCTIONAL APPROACH WITH CONTINOUS ENGAGEMENT OF PATIENT AND FAMILY

Malas et al 2017

Multidisciplinary Intervention

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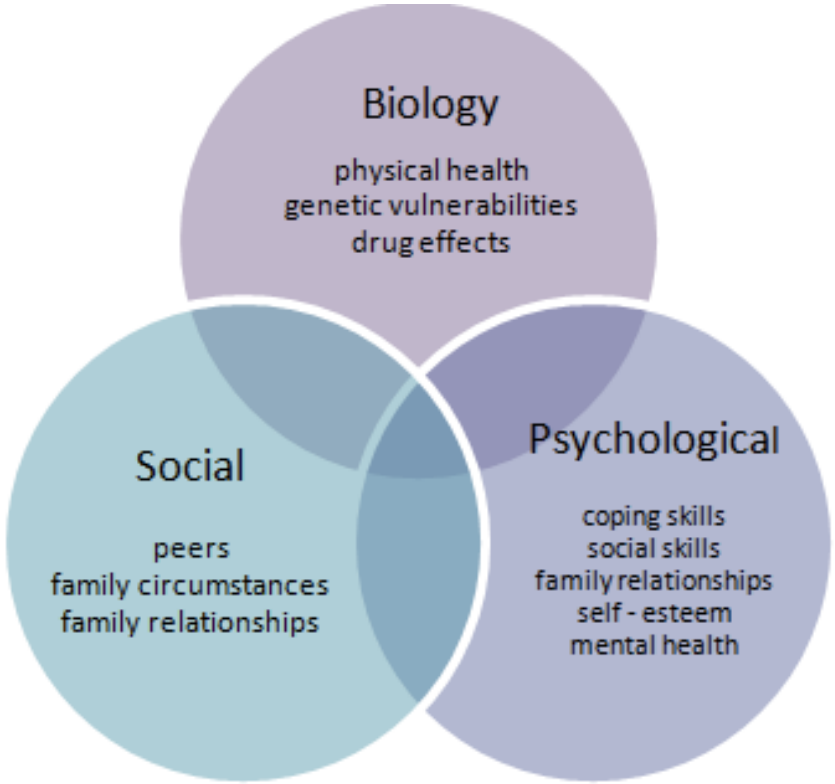

Children and adolescents recover day-to-day function better when they have access to multidisciplinary intervention including:

- ✓ Medications
- ✓ Physical activity (physical therapy)
- ✓ CBT/Psychological Interventions
  - ✓ Incorporating the caregivers

Pediatrician's Role

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- Continued education and reassurance
- Advanced, scheduled, and frequent follow-up visits
  - Maintains alliance
  - Reinforces "well" visits and functional behaviors (visits outside of symptom exacerbations!)
  - Prevents "doctor shopping" and "over medicalization"
- Address new symptoms as they arise as well as factors perpetuating symptoms
- Follow-up on functional progress
- Support continued avoidance of unnecessary testing or subspecialty referrals

Behavioral Approaches to Somatization

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- Cognitive Behavioral Therapy (CBT)
- Behavioral Therapy
- Lifestyle Modifications
- Biofeedback
- Mindfulness
- Hypnosis / Relaxation Training
- Physical Therapy
- Occupational Therapy

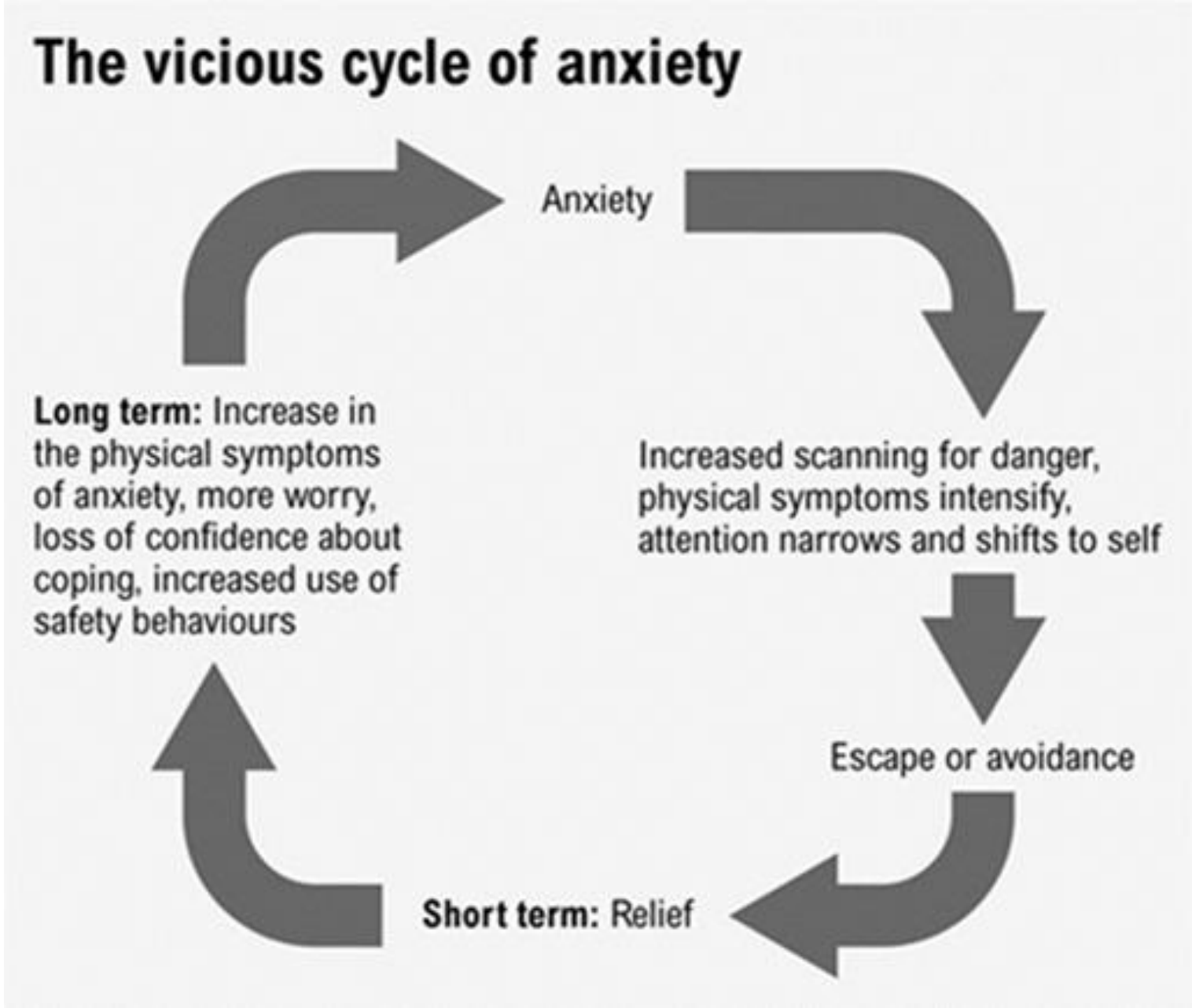
Role of Avoidance

Patients will often:

- Avoid things that they *think* will make them feel worse
- Base activity on how they *feel* in the moment

Activity Cycling

- When they feel better, may push themselves and "over do it" then "crash" and then limit activity


The vicious cycle of anxiety
Anxiety
Increased scanning for danger, physical symptoms intensify, attention narrows and shifts to self
Escape or avoidance
Short term: Relief
Long term: Increase in the physical symptoms of anxiety, more worry, loss of confidence about coping, increased use of safety behaviours

Cognitive Behavioral Therapy

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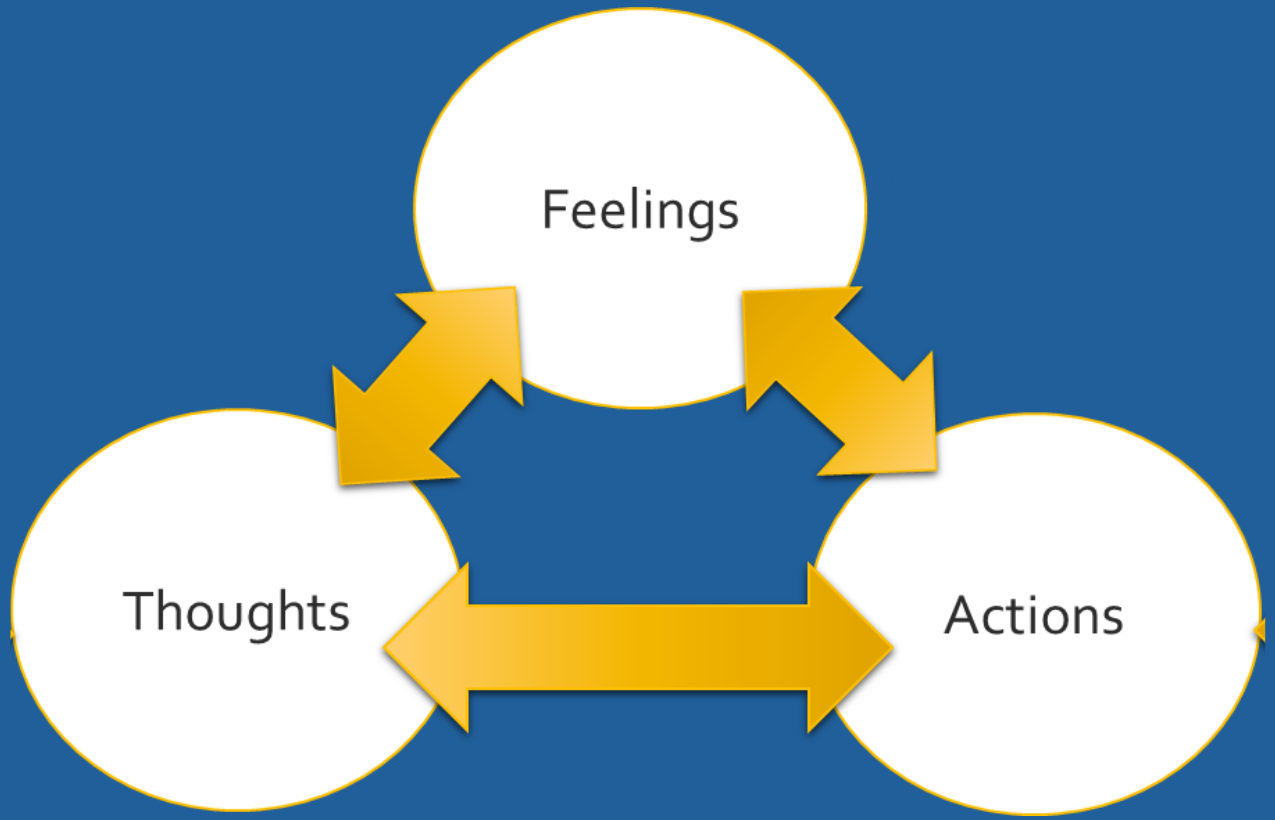

Cognitive Behavioral Therapy

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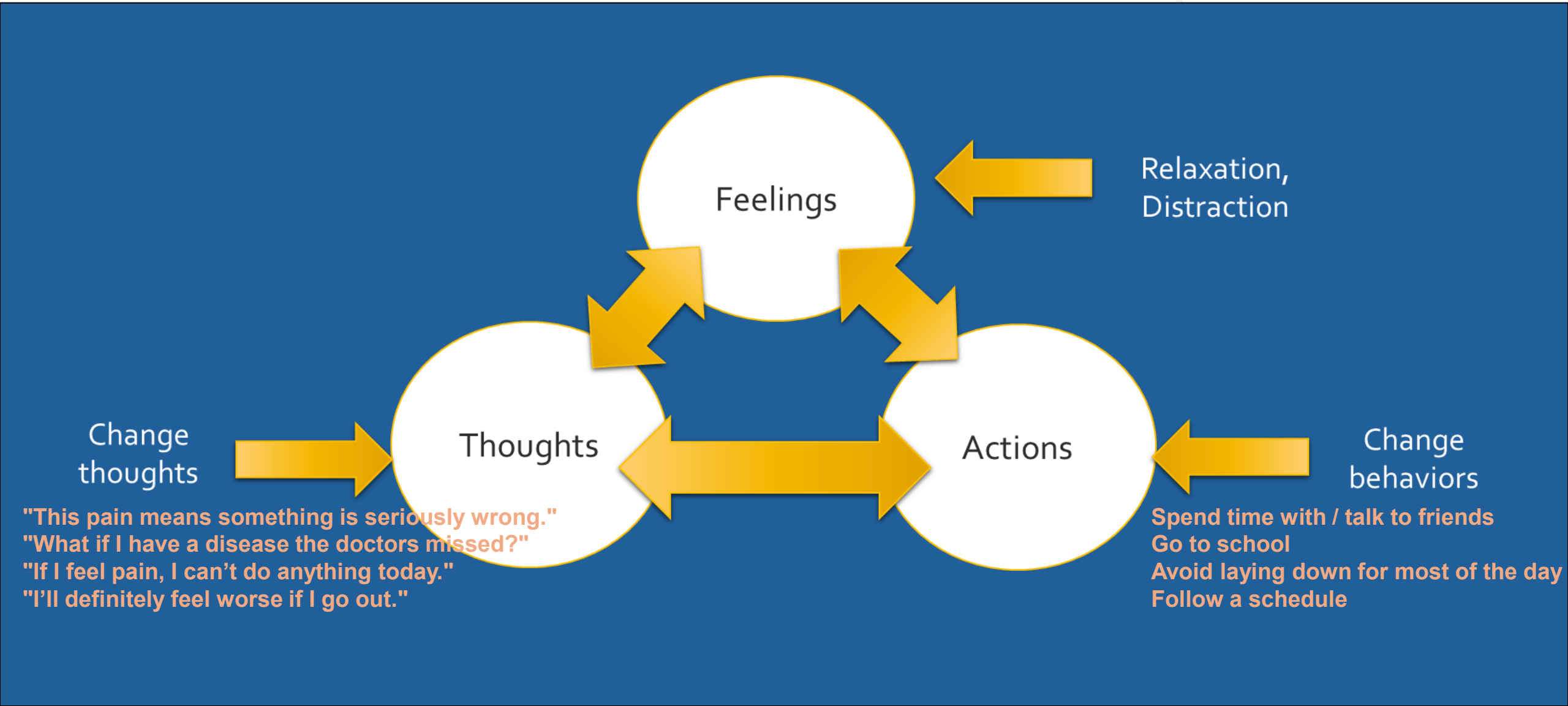

Cognitive Strategies (Thinking Traps/ Cognitive Distortions)

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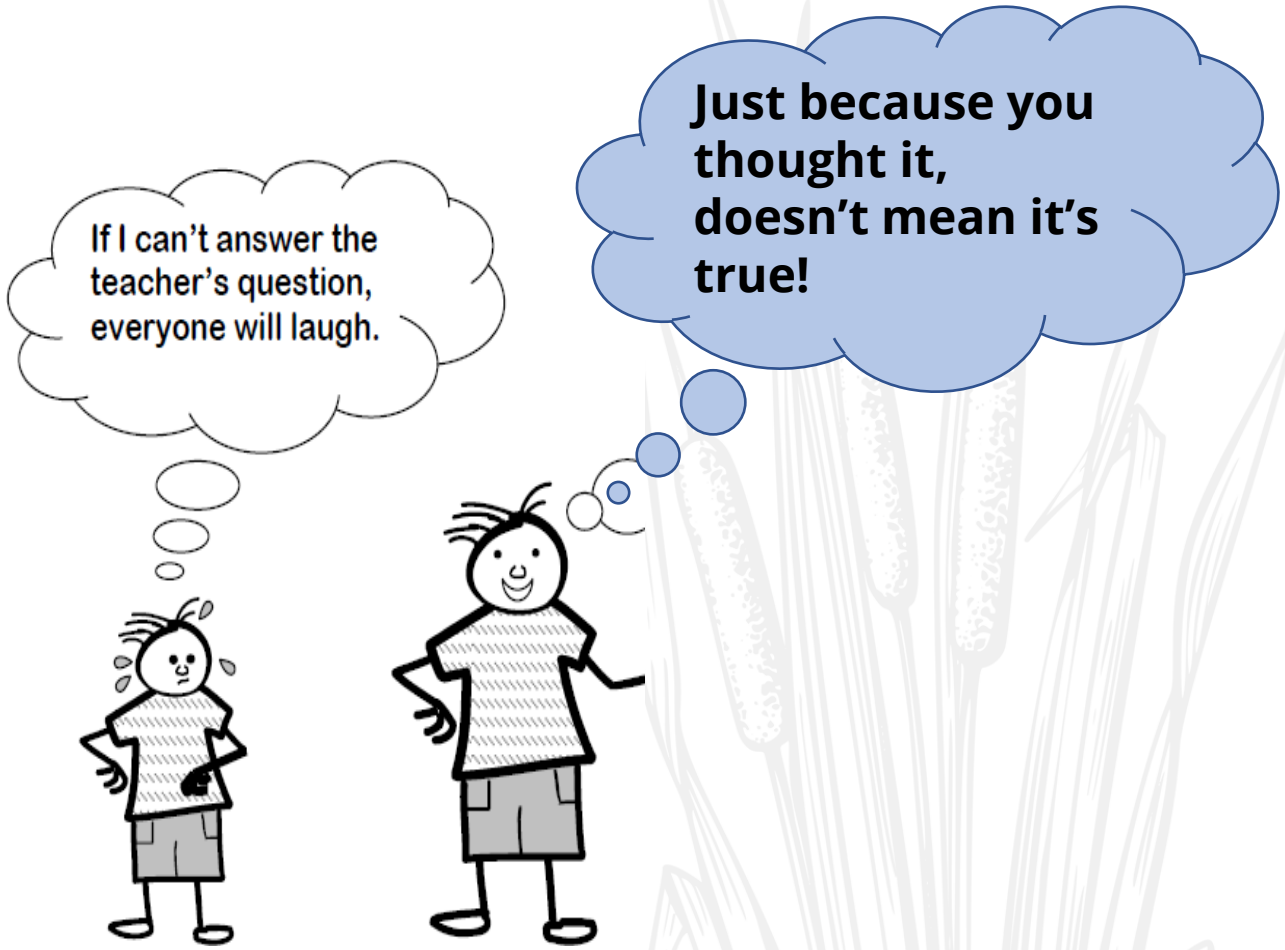
- Help children identify unhelpful thoughts, and:
  - Restructure it (more helpful thought)
  - Talk back to it
  - Detach from it ("just another worried thought. It's not important")
  - Acceptance to increase function
  - Defusion:
    - Noticing & observing your mind ("I am having the thought that [I can't manage it]")
    - Thoughts as "stories"



Mindfulness

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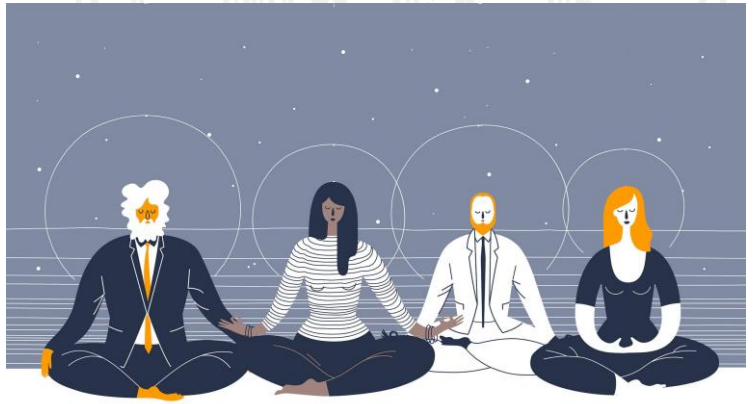
- Being in the moment, instead of lost in our thoughts and feelings
- Used as prevention *and* in any moment when feeling overwhelmed
- Mindfulness takes practice!
  - Notice something (e.g., what you see, hear, touch, taste, smell, a feeling, a thought, a memory)
  - Letting go of your thoughts
  - Let your feelings be what they are without judging
- **Examples:**
  - Diaphragmatic breathing (BellyBio App)
  - 5 senses grounding
  - Sight (the hand, a mindful walk)
  - Taste (eating M&Ms or raisins)
  - Daily mindfulness (showering, brushing teeth, eating breakfast)



Mindful.org

Additional CBT Components

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- Psychoeducation to increase understanding of the ANS/overactivation and mind-body connection, role of stress
- Incorporate components of ACT
  - Identify values and long-term goals
  - Use of SMART goals to increase engagement in these areas and pacing to increase function
- Problem-solving and communication skills
- Additional interventions if needed:
  - Adherence, sleep hygiene, parent behavior-management/communication strategies related to symptoms, lifestyle factors (diet and exercise)

CBT - Evidence

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- Reduces:
  - Symptom intensity
  - Symptom frequency
  - Hypervigilance
  - Catastrophizing
- Improves
  - Overall treatment outcomes
  - Functional impairment
  - Quality of life
- Also improves depressive and anxiety symptoms

Parent-Focused Interventions

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- Reduce the focus on physical symptoms
  - Reduce/eliminate status checks and symptom-related discussions
  - Avoid excessive attention to pain behaviors
- Encourage normal activity during episodes
  - Adaptation is better than elimination
  - Natural consequences for home from school days
  - Reward activity participation and school attendance
- Encourage independent coping
  - “What do you think you can do right now to help your symptoms?”
  - Prepare list in advance
- Parental modeling of effective pain management and coping

Parent-Interventions - Evidence

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- Reduced:
  - Parental solicitousness
  - Negative beliefs / catastrophizing
  - Pain behaviors (from kids)
  - Healthcare visits
- Improved:
  - Functional disability

Does not change symptom severity directly

Sleep Interventions / Sleep Hygiene

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- **Keep a consistent sleep schedule during the weekdays and weekends**
- Have a consistent, calming bedtime routine
- **Avoid exposure to any electronics (television, phone, tablet, etc.) 30-60 minutes prior to bedtime, and remove electronics from room**
- **Avoid caffeine** (sodas, teas, etc.) after 3pm
- **Limit or reduce daytime naps**. If you must nap, try to keep under 1 hour and before 3:00pm.
- Stimulus control: **Bed is ONLY for sleeping!** If at bedtime, you cannot fall asleep after 20 minutes, get out of bed and do something boring/calming until feel sleepy
- The National Sleep Foundation (NSF) recommends the following total sleep per day by age:
  - Children (6-13 years): 9-11 hours
  - Teenager (14-17 years): 8-10 hours
  - Young adult (18-25 years): 7-9 hours

Sleep Interventions - Evidence

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- Improved sleep quality =
  - Reduced somatic symptoms
  - Faster improvement in symptoms
- Reduces co-occurring internalizing symptoms

School Avoidance

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- Missing school due to symptoms → school avoidance reinforces symptoms → more missed school (another cycle!)
  - Applies to late drop-offs, early pick-ups, frequent calls home, etc.

Welp, they've already missed 2+ weeks of school…

- Keep a structured schedule at home - during school hours, doing school activities
  - No TV, videogames, phones, fun outings, sleeping, etc → reinforcing!

- Utilize contingencies and rewards for engaging with school

SCHOOL AVOIDANCE ALLIANCE

https://schoolavoidance.org/

School Interventions

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- Assess and monitoring other reasons school may be difficult
  - Anxiety, learning problems, bullying
- School accommodations (504 plan):
  - Check-ins or breaks with school counselor
  - Water in class, snacks
  - Extra time to complete work as needed
- Plan for nurse's office use
- For school refusers, gradual re-entry plan

School Re-Entry

- Scheduling considerations
  - Morning
  - Afternoon
  - Lunch
  - Child's preference
  - Classes with preferred peers
  - Locations to go in school
  - Safe adult / contact

- NO BACKSLIDING

Week	Date	Schedule
1	November 18-22	Leave after lunch (12:10)
2	November 25-29	Leave at same time as everyone else (3-hour early dismissal)
3	December 2-6	Leave at 12:45
4	December 9-13	Leave at 1:45
5	December 16-20	Leave at 3:00
6	January 2-3	Leave at 3:00
7	January 6-10	Full day

Activity Pacing

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A Note about Home and Hospital (or virtual)

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- Generally, avoid!!!
- Considerations
  - Time out of school so far
  - Tutoring to support with academic catch-up
  - Clear re-entry expectations (not a blank check to miss school)
    - H&H is a temporary tool
  - Close collaboration between school, therapist, and parents

Intensive Interventions

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- When functional impairment is more profound, children may need more intensive, multidisciplinary treatment
- Medical-psychiatric units, physical rehabilitation units, or structured day treatment programs
- Outcomes:
  - Symptom reduction
  - Improved quality of life
  - Decreased healthcare utilization

Kennedy Krieger

Specialized Transition Program/Neurorehabilitation Day Hospital (STP)

Functional Neurological Disorder (FND) Clinic

Functional Rehabilitation of Chronic Health Impairments Program

Putting it Together

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Psychoeducation provides an answer, reduces uncertainty, and gives a positive pathway for treatment

Physical strategies give youth actions to do and help them gain more functional abilities

Behavioral strategies give youth an opposite action to do, change their attention and turn off the fight or flight response, reduce sympathetic action, which decreases symptoms

Cognitive strategies help manage negative thinking, emotional distress, and stress responses, which lessen symptom intensity and frequency

Parenting strategies help by increasing positive attention to active strategies and completion of regular daily activities

In combination, strategies retrain the nervous system and improve symptoms over time

Case Vignette - Revisited

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Intervention:

- Psychoeducation on mind-body connection
- Collaborative care plan with pediatrician to reduce unnecessary medical visits
- CBT-based therapy targeting symptom-related anxiety, stress management, sleep, and gradual return to school/swimming
- Family sessions to increase supportive communication around stress and symptom accommodation

Outcomes:

- 10th grade – attending 90% of school days
- Pain episodes decreased in frequency and intensity
- Family reported less conflict at home, better quality of life

Resources & Referrals

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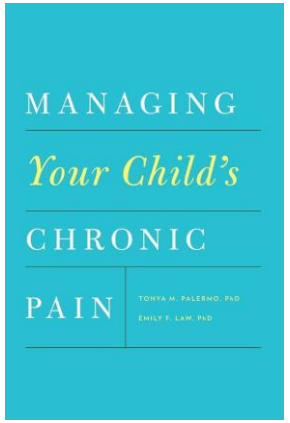
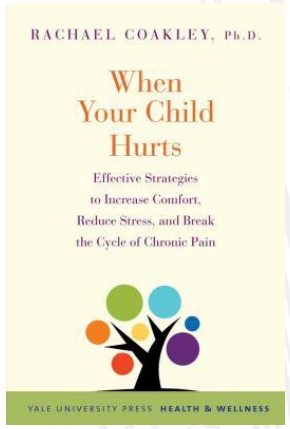
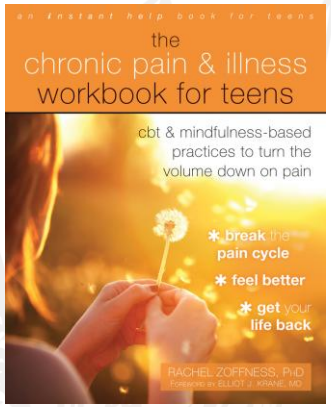
- Kennedy Krieger Institute
  - Comfortability Program
  - Specialized Transition Program/Neurorehabilitation Day Hospital (STP)
  - Functional Neurological Disorder (FND) Clinic
  - Functional Rehabilitation of Chronic Health Impairments Program
- GIFT Center at Johns Hopkins (disorders of gut-brain interaction)







Society of Pediatric Psychology Pediatric Pain SIG
https://painsigspp.wordpress.com/

Society of Pediatric Psychology FNSD SIG
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  Johns Hopkins School of Medicine

- Richa Aggarwal Dutta, PhD –
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Thank you!

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