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[LOGOS]
Somatic Concerns: Stress & the body

What is it and what can we do about it?

By Nathan Fite, M.Ed. & Laurent McKinley, S.S.P.
University of Cincinnati
Stress by the Numbers

How is stress affecting youth in schools?

- 9- to 13-year-olds report me more stressed by academics than any other stressor (36%) — even friends, peers, gossip, teasing, (21)% or family problems (31%; APA, 2009)
- 37% of teen girls and 23% of teen boys report feeling depressed or sad due to stress
- When people are living with high stress, they are more likely suffer from sleep deprivation, engage in a sedentary lifestyle, and eat unhealthy foods
- 42% of teens say they either are not doing enough to manage their stress or they are not sure if they are doing enough to manage it (APA, 2009)
- 73% of students listed academic stress as their number one reason for using drugs, yet only 7% of parents believe teens might use drugs to deal with stress (Partnership for a Drug Free America, 2008).
Stress

Stress is a physiological response that serves as a mechanism of mediation linking any given stressor to its target-organ effect.

- Stressors are stimuli that are either (a) psychosocial events or (b) biogenic.
- Stress is a response or in other words a cognitive appraisal.

Stress

From Sensory Pathways

Stress Response to End Organs

1. Direct neural innervations via sympathetic, parasympathetic, and somatic nervous systems
2. “Fight-or-Flight” Response (Cannon)
3. General Adaptation Syndrome (Selye)

EVENT

Sensory Reception via Sensory Pathways

Cognitive Interpretation via Neocortex

Perception of Threat

Triggering Mechanisms

Stress Response via Hypothalamus

EVENT

Affective Integration via Limbic System

No Perception of Threat

No Stress Response

End Organ
The mind and body interface; every psychological event is simultaneously physiological
Biological Effects

Benefits of acute stress are transient in nature

- You are able to react quickly to threatening stimuli (e.g., flee or fight)
- However, there is evidence to suggest that even acute stress can have harmful effects on the body

Body releases Glucocorticoids

- Hormones, such as cortisol, are quickly released into the bloodstream.
- Sudden increase in energy and responsiveness as the body begins to convert protein into glucose in order to accelerate energy production.
- Sudden increases in blood flow for self preservation
Biological Effects Cont.

- **Chronic Stress**
  - It is a state of prolonged tension from internal or external stressors, which may cause various physical manifestations (Somatization)
    - Activation of the Autonomic Nervous System
    - Body releases Glucocorticoids
    - Interaction between the CNS and Immune System
      - asthma, impaired growth, neurological symptoms (paresthesias, muscular spasticity, seizures, paralysis), hippocampal atrophy, back pain, arrhythmias, fatigue, headaches, night sweats, irritable bowel syndrome, ulcers, **anxiety**, **depression**, and suppress the immune system...
Model for Intervention

Stimuli

Stressor

Cognition

Eustress

Distress

Behavior

Coping

Reacting
Assessments

K6/K10 Scales

• Ten items rated on 5-point Likert scale
• This assessment is formatted as a questionnaire and is intended to yield a global measure of distress based on questions about anxiety and depressive symptoms that have been experienced over the past four weeks

Who5

• Five items rated on 6-point Likert scale
• Subjective quality of life based on positive mood (good spirits, relaxation), vitality (being active and waking up fresh and rested), and general interest (being interested in things) that have been experienced over the past two weeks

(Kessler et al., 2002; Psychiatric Center North Zealand)
Mindfulness-based Interventions (MBIs)

- Mindfulness is an intentional and non-judgmental awareness of the present moment (Kabat-Zinn, 1990)
- Zenner and colleagues (2014) conducted a meta-analysis examining the effects of mindfulness-based interventions (MBIs) with over 1000 children. They found that (MBIs) hold promise, particularly in relation to improving cognitive performance and resilience to stress.

- Effective intervention components
  - Breath Awareness; Working with thoughts and emotions; Psycho-educational; Awareness of senses and practices in daily life; Group discussion; Body-scan; Home practice; Kindness practices; Body practices like yoga (Zenner et al., 2014)
Participants: 97 fourth- and fifth-grade students

Intervention Components:

- Yoga - postures and movement series, including bending, stretching, and fluid movement
- Breathing exercises - exercises trained the youths to use their breath to center and calm themselves
- Guided mindfulness practices - identifying stressors, using mindfulness techniques to respond to stress, cultivating positive relationships with others, and keeping one’s mind and body healthy

Measures:

- Responses to Stress Questionnaire (RSQ)
- Mood and Feelings Questionnaire (MFQ)

Results:

- This intervention improve student’s capacity for sustained attention and increase their awareness and ability to regulate their cognitive, physiologic, and bodily states and decrease overall symptoms associated with stress
MBIs: Napoli and colleagues (2005)

Participants: 254 first-, second- and third-grade students

Intervention Components: Attention Academy Program (AAP)
  • Breathwork - Three part breath, Ocean breath, Counting breaths
  • Bodyscan - Students attend to each body part as they engage in breathing exercises.
  • Movement - Yoga stretches/positions
  • Sensorimotor awareness activities - Aromatherapy, Listening to sounds
  • Thoughts and communication - Thought awareness, communication, and listening activities

Measures:
  • ADD-H Comprehensive Teacher Rating Scale (ACTeRS); Test Anxiety Scale (TAS); Test of Everyday Attention for Children (TEA-Ch)

Results: Children and youth who engaged in mindfulness practices were able to self-soothe, calm themselves, and become more present (increased ability to focus and pay attention)

(Napoli et al., 2005)
MBIs: Singh and colleagues (2007)

Participants: 3 seventh-grade students with conduct disorder

Intervention Components:

- **Meditation on the Soles of the Feet** is a mindfulness-based intervention that has been used as a self-management technique to control aggression.

- Training involved the therapist (a) providing a rationale for the training—to help the adolescent control his or her emotion (e.g., anger) before it was expressed as a socially maladaptive behavior (e.g., aggression) and (b) taking the adolescent through the steps of acquiring the new skill.

Target Behaviors: Bullying/Fire Setting; Aggression/Cruelty; Aggression/Noncompliance

Results: Participants reported feeling more relaxed, an increased ability to control their anger, greater focus, and improved sleep

(Singh et al., 2007)
Additional Resources

Breathing Strategies:
• [Creative Ways to Teach Deep Breathing to Kids](#)
• [Child Development Club](#)

Mindfulness Strategies:
• [8 Ways to Teach Mindfulness to Kids](#)

Teaching Coping Skills for Stress Management:
• [Wholistic Stress Control Institute](#)
• [PBISword.com](#)

Interactive Video Lessons:
• [GoZen.com](#)

School-Wide strategies to address stress related concerns:
• [Learning To BREATHE](#)
• [Mindful Schools](#)
• [Proactive Supports](#)
• [Intervention Central](#)

Stress Reduction Activities for Students
• [Healthiesf.org](#)
References


Abdominal Pain-Related Gastrointestinal Disorders
IBS-IBD

Casey McPherson
Schevita Persaud
IBS-IBD

• What is it?
  ▶ Brain-gut disorder
  ▶ Long-term, recurrent disorder of gastrointestinal functioning

• Symptoms:
  ▶ Abdominal pain/discomfort
  ▶ Bloating
  ▶ Sense of gaseousness
  ▶ Diarrhea and/or constipation

• Causes
  ▶ Impaired regulation between brain and gut
  ▶ Problems digesting certain food
  ▶ Stress/anxiety
IBS-IBD

• Prevalence in population
  □ 10-20% of the adult population
  □ Only ~\(\frac{1}{3}\) of people consult their physician

• Prevalence in schools?
  □ between 5-20% of students have IBS
    ▶ IBS is diagnosed during childhood or adolescence in 25-30% of patients

Rasquin & Caplan, 2002
IBS-IBD Treatment
IBS-IBD

• Dietary Changes
• Medical Interventions
  ▶ Fiber supplements
  ▶ Probiotics
IBS-IBD

Medication

- Alosetron (Lotronex) or Lubiprostone (Amitiza) - specifically for IBS
- Steroids,
- Antidiarrheals (loperamide)
- Anticholinergic and Antispasmodic (hyoscyamine or dicyclomine; Levsin and Bentyl)
- Antidepressants - SSRI’s (e.g., Prozac, Sarafem, Paxil); tricyclic antidepressants (e.g., Tofranil or Pamelor)
Best Practices For Addressing IBS-IBD in Schools
IBS-IBD Treatment

Functional gastrointestinal disorders (FGID) are significantly correlated with anxiety disorders

Anxiety exacerbates the symptoms

Focus on anxiety for treatment in schools
IBS-IBD Treatment

• Social Emotional
  ► CBT
  ► Interpersonal Psychotherapy
  ► Teaching coping skills for stress
    ► Progressive muscle relaxation
    ► Biofeedback
    ► Guided imagery
    ► Mindfulness-based stress reduction
IBS-IBD Interventions

SEEDS

- Coping Cat (Kendall 1994)
- Cool Kids
- Coping Koala (Barrett 1996)
- ACTION (Waters 2009)
- Skills for academic and social success (SASS) (Masia-Warner 2007)
Goals of Interventions are:

- Recognize anxious feelings or bodily reactions to anxiety
- Clarify thoughts or cognitions in anxiety-provoking situations
- Develop coping skills
- Evaluate outcomes
- Modeling, exposure, role playing, relaxation training
Common CBT Components

- Psychoeducation
  - Emma App

- Relaxation

- Building a cognitive Coping Template
Common CBT Components

- Problem Solving
- Contingent Reinforcement
- Exposure-based procedures
IBS-IBD Accommodations

IBS-IBD qualify as a disability under the ADA
▶ 504
▶ Special education
IBS-IBD Accommodations

- Academic/General Accommodations
  - Homebound support
  - Unrestricted access to bathroom
  - Stop the clock breaks on tests
  - Water and gatorade allowed in classrooms
IBS-IBD Accommodations

- Academic/General Accommodations
  - Modified policies for make-up work
  - Extended time on tests
  - Seat near the door
  - Permission to bring food from home
Resources


Resources

Books suggested for Parents

The Gut Solution: A guide for Parents with Children who have Recurrent Abdominal Pain and Irritable Bowel Syndrome Paperback – January 8, 2014 by Michael Lawson MD (Author), Jessica Del Pozo PhD (Author)

First Year: Irritable Bowel Syndrome, by Heather Van Vorous
http://www.helpforibs.com/books/1stIBS/books_1ibs_home.asp

https://youtu.be/yH-MWeRMRIw
Jeanne Tung, M.D., a pediatric gastroenterologist at Mayo Clinic specializing in the care and evaluation of patients with inflammatory bowel disease (IBD), lists helpful tips for helping children minimize their condition's impact on their school experience.

https://youtu.be/yKzwK82mZrY
Lynn Walker PhD, is Professor of Pediatrics, and Director, Division of Adolescent Medicine at Vanderbilt University in Nashville, TN. Dr. Walker is a behavioral scientist, clinician, and educator. Here she discusses strategies for helping families and children or adolescents deal with managing chronic pain conditions that affect the bowel such as IBS or IBD. Managing pain, going to school, dealing with bathroom issues, and explaining what is wrong to peers are all challenging issues that confront the patient and the family.

Emma App used at Mayo Clinic to teach children 10-18 about IBS/IBD.
Weight Management

Evidence-based Practices for Schools

Kavita Atwal & Erin Knight
Conceptualization of Weight Management

- Feeding and Eating Disorders
  - Anorexia Nervosa, Bulimia Nervosa
- Obesity
- Other related disorders
  - Binge eating disorder
Eating disorders
Extreme emotions, attitudes, and behaviors surrounding weight and food issues

Result in impairments in physical health and psychosocial functioning (American Psychological Association [APA], 2013)

School-aged individuals are: “significantly preoccupied with food, weight, and shape, and possibly engage in disturbed eating behaviors” (Gowers & Bryant-Waugh, 2004)
DSM-5:

- Pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, binge eating disorder, unspecified feeding or eating disorder, other specified feeding or eating disorder

- Anorexia nervosa and bulimia nervosa typically diagnosed during adolescence (Hudson, Hiripi, Pope, & Kessler, 2007)

  - Comorbid with mood, anxiety, impulse control, and substance use disorders (Hudson et al., 2007)

  - Increased risk of death from suicide or medical complications (www.nationaleatingdisorders.org)
Anorexia Nervosa

- Prevalence: 0.9% (adolescents, aged 13-18)
- Features:
  - Inadequate food intake
  - Significantly low body weight (consider age, sex, developmental trajectory, and physical health)
  - Intense fear of gaining weight despite a low body weight
  - Obsession with weight and persistent behaviors to prevent weight gain
- Binge-eating/purging type; restricting type
- Peak periods of onset: 14 to 18 years old (MS to HS & HS to post-HS)
- One of highest death rates of any mental health condition (approximately 5-20% of sufferers will die due to its effects)
Behavioral Impact
- Impaired concentration
- Increased obsessionality (e.g., with food)
- Poor sleep

Social-emotional Impact
- Depressed mood
- Anxiety
- Irritability
- Social withdrawal
- Decreased energy

Physical Impact
- Cold sensitivity
- Increased fullness
- Yellowing skin
- Fine hair
- Low blood pressure
- Cardiovascular problems

Academic Impact
- May have to leave school for treatment or hospitalization
Bulimia Nervosa

- Prevalence: 0.9% (adolescents, aged 13-18)
- Features:
  - Frequent binging episodes
  - Compensatory behaviors to prevent weight gain (e.g., self-induced vomiting, laxatives)
  - Feeling of not having control during episodes of binge eating
  - Body image affecting self-esteem
- Usually appear to have average body weight
- Behavioral Impact
  - Self-harm
  - Substance/alcohol use
- Social-emotional Impact
  - Depression
  - Anxiety
- Physical Impact
  - Fatigue
  - Headaches
  - Erosion of dental enamel
  - Electrolyte disturbance
- Academic Impact
  - May have to leave school for treatment or hospitalization
  - Low concentration
What to Look for in Schools

- May initially appear as a model student, but mood, cognition, and physical health may be affected with time
  - “socially withdrawn, depressed, tired, distracted, fidgety, or unmotivated” (Hellings & Bowles, 2007)
- Changes in student weight
- Oversized clothing (to hide body, or because they think they are bigger than they are)
- Student may repeatedly touch parts of body to check their size
- Student may wear multiple layers of clothing to stay warm, or stay near heater
- Change in eating habits (skipping school meals, eating less, scheduling other activities during lunch, eat “healthy” foods, complain of food allergies, chew gum or drink water a lot)
- Student may feel dizzy or faint

Bardick et al. (2004); Treasure (1997)
Potential Accommodations

- Social support
  - Groups for students with similar concerns

- Incorporating education about eating disorders into curriculum
  - To prevent copy-cat behavior
  - To prevent social exclusion

- Shortened school day or week during treatment

- Eating with staff/friend, away from main lunch area

- Limits on exercise

- Sit near heater, have blanket or hot water bottle (Treasure, 1997)

- Home-schooling

Hellings & Bowles (2007)
Interventions

- **Family Based Therapy (FBT)**
  - Re-establish healthy eating, restoring weight, interrupting compensatory behaviors

- **Cognitive Behavioral Therapy (CBT)**
  - Focus on beliefs, values, and cognitive processes that maintain the eating disorder behavior (e.g., disturbed perception of weight, intense fear)
  - Leading evidence-based treatment for bulimia nervosa (Murphy et al., 2010)
  - Also target self-esteem, friendships/relationships, anxiety, depression

- **Interpersonal Psychotherapy (IPT)**
  - Short-term
  - Focuses on interpersonal difficulties that contribute to the onset and maintenance of eating disorder symptoms (rather than on behavioral aspects of disordered eating)

- Also commonly used: Conjoint Family Therapy, Dialectical Behavior Therapy, Acceptance and Commitment Therapy, Behavioral Systems Family Therapy, Cognitive Remediation Therapy
Weight management: OBESITY
Obesity: The Problem

What is obesity?
- Excess weight, often measured by BMI
- Definition differs for children in some ways
  - At-risk: 85th and 95th percentiles
  - Overweight: 95th percentile

Why do we care?
- Obesity accounts for 21% of health care costs in the U.S. (Cawley & Meyerhoefer, 2012)
- Common in developed countries: WHO considers it an epidemic
- Lifelong trends (Budd & Volpe, 2006)
Obesity: The Problem

- The most effective prevention and intervention efforts begin in schools
  - 1 in 3 children in the US are overweight or obese
    - This can lead to one third of children born after 2000 to developing diabetes
    - 17% of all children and adolescents in the US are obese
- Obesity impacts many areas of school functioning
Impact on the Student

- **Academic**
  - Some research to suggest negative impact on academic achievement (Clark et al., 2009; Crosnoe & Miller, 2004; Datar, Sturm, & Magnabosco, 2004)
  - Health issues can impact school functioning, e.g., school attendance

- **Behavioral**
  - Some evidence to suggest concurrent behavior problems in 8-11 year olds (Lumeng et al., 2003)

- **Social-Emotional**: various results across ages
  - Negative effects on self-esteem at adolescence (Strauss, 2000)
  - Higher risk for victimization (Janssen et al., 2004)

- Negative long-term impacts (Hill & Trowbridge, 1998)
Research on Prevention and Intervention

- **Prevention**
  - Simply providing education is not effective as prevention measure (Sbruzzi et al., 2013)
  - Limited success in reducing BMI in prevention studies, but practices of schools did change (Budd & Volpe, 2006)

- **Intervention: effective practices**
  - Early, family-centered, permanent change
  - Family-based approach (Collins et al., 2011)
  - Educational interventions lasting at least 6 months (Sbruzzi et al., 2013)
  - Combined tx works best (Luttikhuis et al., 2010)
  - Multidisciplinary lifestyle treatment (medical, nutritional, physical and psychological counseling) led to decreased BMI at 3-month & 12-month follow up (Vos et al., 2011)
Best Practices in Prevention

NASP recommendations:
1. Multifaceted (focus on diet, exercise, and parent involvement),
   - 60+ minutes per day of aerobic activity for kids 6-17 years old
   - Enhanced PE: rather than increase minutes, improve curriculum
   - Food: consider food being served at breakfast and lunch; reduce carbonated beverages
   - PULSE program: Promoting Universal Longevity via School-Family Ecologies
2. Implemented long term, and look at BMI as outcome
   - Start Early: begin in early childhood settings
3. Incorporate nutritional education
4. Involve parents and community
   - Active transport to school, e.g., “Walk to School Day” events
5. Include behavioral counseling strategies (self-monitoring, social support, stress management, and relapse prevention support)

National Institute for Health and Clinical Excellence; CDC
Best Practices in Intervention

- NASP recommendations
  - MTSS approach: school-wide health curriculum (Tier 1), students at risk for obesity (Tier 2), and individualized medical nutrition therapy (Tier 3)

- Programs in research typically include:
  - Increasing physical activity, reducing sedentary behaviors, and nutrition education component

- In school-based obesity interventions, intensity and level of collaboration are important (Cook-Cottone et al., 2009)

- Collaborative interventions are best
<table>
<thead>
<tr>
<th>TARGET</th>
<th>SUGGESTED ACTION</th>
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<tbody>
<tr>
<td><strong>School policies and school</strong></td>
<td>Ensure school policies and the school’s environment encourage physical activity and a healthy diet. Consider:</td>
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<tr>
<td><strong>environment</strong></td>
<td>• Building layout</td>
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<td></td>
<td>• Catering, including vending machines</td>
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<td>• Food brought into school by children</td>
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<td>• The curriculum, including P.E.</td>
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<td>• School travel plans, including provision for cycling</td>
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<td>• Extended schools.</td>
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<td><strong>Staff training</strong></td>
<td>Teaching, support and catering staff should have training on how to implement healthy school policies.</td>
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<td><strong>Links</strong></td>
<td>Establish links with health professionals and those involved in local strategies and partnerships to promote sports for children and young people</td>
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<td>w/relevant organizations &amp;</td>
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<td>professionals</td>
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<td><strong>Interventions</strong></td>
<td>Introduce sustained interventions to encourage pupils to develop life-long healthy habits. Short term, ‘one-off’ events are not effective on their own.</td>
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<td>Take pupils’ views into account - including differences between boys and girls, and barriers such as cost or concerns about the taste of healthy food.</td>
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<td>PE/sport staff should promote activities that children enjoy and can take part in outside school and into adulthood.</td>
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<td>Children should eat meals in a pleasant sociable environment free from distractions. Younger ones should be supervised; if possible, staff should eat with them.</td>
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<td>Involve parents where possible; for example, through special events, newsletters, and information about lunch menus.</td>
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Resources

OBESITY

► Let’s Move Campaign
  ► http://www.letsmove.gov/resources

► NAEYC Childhood Obesity Prevention
  ► http://www.naeyc.org/childhood_obesity_resources

► CDC’s Guides

EATING DISORDERS

► National Eating Disorders Association (NEDA)
  ► http://www.nationaleatingdisorders.org

► Academy for Eating Disorders (AED)
  ► http://aedweb.org
Selected References


Selected References


Diabetes Mellitus: Definition, Impact, and Treatment of Children in Schools

Presented by Katie Jones & Lynda Kasky-Hernández
General Information

- Formally referred to as *Diabetes Mellitus*
- Most prevalent chronic disease among children and adolescents
- Approx. 17 million people diagnosed in the U.S.

**What is diabetes?**

*Diabetes is a group of metabolic disorders in which a person has high blood sugar, either because the body does not produce enough insulin or because cells do not respond to the insulin that is produced in the pancreas.*
Types of Diabetes

**Type 1 Diabetes**
- Results from the body’s failure to produce insulin
- aka. insulin-dependent diabetes or juvenile diabetes
- Note: not caused by obesity

**Type 2 Diabetes**
- Results from insulin resistance where cells fail to use insulin properly
- aka. NIDDM or adult-onset diabetes

**Gestational Diabetes**
- Develops during pregnancy (~24th week)
Symptoms of Diabetes

**Type 1 Diabetes**
- Increase in thirst and urination
- Frequent hunger or decreased appetite
- Weight loss (even though consuming more)
- Extreme fatigue
- Blurred vision

**Type 2 Diabetes**
- Type 1 Symptoms
- Nausea
- Frequent infections
- Slow-healing wounds
- Dark spot on the neck, armpit, or groin may appear as a sign of insulin resistance
- Tingling, pain, or numbness in the hands/feet
Symptoms of Diabetes
(continued)

Hypo-glycemia
- Most common immediate health issue for students with diabetes
- Low blood glucose (aka. insulin shock)
- Symptoms
  - shaking, sweating, light-headedness, irritability, confusion, sleepiness, mood swings, nausea, pale complexion, sweaty or clammy
- Treatment
  - Prompt consumption of carbs

Hyper-glycemia
- High blood glucose when the body gets too little insulin, too much food, or too little exercise
- Symptoms
  - high blood glucose, thirst, frequent urination, blurry vision
- Can be caused by stress or illness
- Treatment
  - Exercising
  - Reducing amount of food consumption
  - Administration of insulin
Treatment of Diabetes

- In general, early detection and treatment can decrease risk of developing complications
- Requires monitoring 24/7
  - Managed by keeping blood glucose levels within a target range
- Balancing food, exercise, and insulin
- Medical treatments and surgeries
- Insulin treatments or insulin pump

**FACT!**

As kids age, they demonstrate decreased treatment adherence

Factors Impacting Treatment Adherence

**Health Belief Model**
- Susceptibility to disease and complications
  - Short- vs. Long-term
  - Self vs. others
- Severity of disease
- Benefits of treatment adherence to health
- Costs of treatment adherence
- Cues to Actions
  - Internal/External

**Importance of family**
- Parental monitoring
- Parental overprotection
- Family cohesion and conflict
  - Comorbidity
- ADHD
- Down Syndrome,
- Psychosocial concerns
  - Possible difficulties adjusting to initial diagnosis
  - High risk of internalizing problems

*Janz & Becker, 1984, as expanded on by Patino et al., 2005; Wyckoff et al., 2015*
Diabetes & Ethnic/Racial Variables

- Higher perceived susceptibility and lower perceived severity with a Black and Latino sample than found in past with White samples (Patino et al., 2005)
- Differences in supports and accommodations at schools (Jacquez et al., 2008)
- Differences in parent knowledge about diabetes and federal laws (Jacquez et al., 2008; Powell et al., 2012)
- The commonly cited differences between minority and majority adolescents is better explained by SES or parental marital status (Powell et al., 2012)
  - Metabolic control
  - Adherence to insulin regimen
Impact on Academic Functioning

- Hypo- and hyperglycemia symptoms
  - Short-term impairment in cognitive and executive functioning; fatigue
  - Long-term complication can include reduced cognitive abilities

- High absence rates
  - Age of diagnosis is related to cognitive deficits

Wychkoff et al., 2015
What is the school’s responsibility?

To help students manage diabetes
- Collaborative team approach with medical providers, school personnel, parents, and others (Wyckoff et al., 2015)

Provide a main contact and liaison
- Often the school nurse
- However, additional staff must have adequate training of general diabetes care (Schwartz et al., 2010; Wyckoff et al., 2015)

Common school-related concerns of students with diabetes
- Restroom privileges, flexibility regarding glucose monitoring, timing and consumption of snacks, administering insulin when needed, access to nutritional information of cafeteria foods, accessibility of school nurse, emotional impact (Schwartz et al., 2010; Wagner et al., 2005)
Intervention and Accommodations

Have you heard of these?

- Section 504 Plan
- Individuals Education Plan (IEP)
- Diabetes Medical Management Plan (DMMP)
- Individualized Health Plan (IHP)

What can schools do?
Individualized Education Plan
IEPs for students with diabetes commonly address the following:

- Where/when blood glucose monitoring and treatment occurs
- Identity of trained diabetes personnel
- Location of student’s diabetes management supplies
- Free access to restroom/water
- Nutritional needs (e.g., meals/snacks)
- Full participation in school-sponsored activities and field trips with coverage from trained personnel
- Alternative times/arrangements for academic exams in the event of hypo/hyperglycemia
- Permission for absences without penalty

*Note: Consider individual needs*
American Diabetes Association (ADA)
http://www.diabetes.org

Juvenile Diabetes Research Foundation (JDRF)
http://jdrf.org

National Diabetes Education Program (NDEP)
http://ndep.nih.gov

Children with Diabetes Online Community
http://www.childrenwithdiabetes.com
References


IT'S LUNCH TIME
Preterm Birth and Low Birth Weight

Jenna Miller, Ed.S., NCSP
Pre-Doctoral Intern, ISPIC
CHSD District 218/INSPIRE Clinic
Definitions: Birth Weight

Low Birth Weight (LBW)
< 2500 g (5.5 lbs)

Very Low Birth Weight (VLBW)
< 1500 g (3.3 lbs)

Extremely Low Birth Weight (ELBW)
< 1000 g (2.2 lbs)
Definitions: Gestational Age

Preterm birth: <37 weeks

Very Preterm: <32 weeks

Extremely Preterm: <29 weeks

Preterm birth and low birth weight terms are not interchangeable, although correlated.
**Video:**
Why wait until 40 weeks?

A baby’s brain at 35 weeks weighs only two-thirds of what it will weigh at 39 to 40 weeks.
Prevalence

About 1 in 8 babies are born preterm
71.1% ....... 34-36 weeks
12.7% ....... 32-33 weeks
10.1%........ 28-31 weeks
6.1%........ <28 weeks

1 in 12 babies is born with low birth weight
85% of babies weighing 500-1500 g survive (1.1lb - 3.3lb)
Figure 2. Very Preterm and Preterm Birth Rates, by Maternal Race/Ethnicity, 2012

<table>
<thead>
<tr>
<th>Category</th>
<th>Very Preterm (&lt;32 weeks)</th>
<th>Preterm (&lt;37 weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1.93</td>
<td>11.55</td>
</tr>
<tr>
<td>Non-Hispanic White</td>
<td>1.55</td>
<td>10.29</td>
</tr>
<tr>
<td>Non-Hispanic Black</td>
<td>3.71</td>
<td>16.53</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>2.13</td>
<td>13.25</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>1.45</td>
<td>10.15</td>
</tr>
<tr>
<td>Hispanic (total)</td>
<td>1.77</td>
<td>11.58</td>
</tr>
<tr>
<td>Mexican</td>
<td>1.67</td>
<td>11.10</td>
</tr>
<tr>
<td>Puerto Rican</td>
<td>2.37</td>
<td>13.23</td>
</tr>
<tr>
<td>Cuban</td>
<td>1.89</td>
<td>14.53</td>
</tr>
<tr>
<td>Central and South American</td>
<td>1.74</td>
<td>11.78</td>
</tr>
</tbody>
</table>

*May include Hispanics. †Separate data for Asians, Native Hawaiians, and other Pacific Islanders not available.

Risk Factors

- Maternal age: Youngest and oldest mothers
- Socioeconomic Status (SES)
- Multiple births (i.e. twins, multiples)
- Women who have had one preterm delivery already
- Infections, smoking, illicit drug use, obesity/underweight, stress
- Early induction labor and caesarean section delivery
Long-term complications

- Majority of VLBW have normal outcomes

- One-third to one-half of ELBW have normal outcomes

- Many may have problems with:
  - Cerebral Palsy (movement disorder)
  - Cognitive skills, learning disability
  - Vision/Hearing
  - Behavior
  - Psychological/Psychiatric issues
  - Chronic health issues
Follow-up of 6-year-old infants born preterm in 1995:
- 32% of had mild disabilities
- 24% had moderate disabilities
- 22% had severe disabilities

Estimated that 60-70% of VPT children will require support from special education services by middle school age.
Cognitive and Academic Deficits

- EF/Attention
- Visual-Motor and Sensory
- Social, Emotional, Behavioral
- Learning Disability
- Language
Early Intervention Process

- Early Identification
- Intervention
- Ongoing Monitoring
Ongoing Monitoring and Intervention

- Close collaboration between home, school, and medical teams

- Education in schools: Parent night/groups
  - School nurse, SW, Speech path., Psychologist

- Developmental milestones and screening tools
  - CDC checklist for parents, English/Spanish
  - Ages and Stages Questionnaire (ASQ)
  - Hawaii Early Learning Profile (HELP)
  - Peabody Picture Vocabulary Test (PPVT)
  - Batelle Developmental Inventory

- Benchmarking and Progress Monitoring
  - Pre-academic, academic skills
School Supports:
RTI, 504, or IEP Special Services

- Occupational/Physical Therapy
- Instructional Academic Programs
- Speech/Language
- Social Work
- Medical/Nursing
Accommodations

**Sensory**
- Noise level
- Light
- Auditory/Visual input
- Room arrangement, class size
- Preferential Seating
- Quiet place to work
- Headphones
- Manipulatives
- Sensory input (either too much or too less)

**Visual-Motor**
- Less visual stimuli on page
- Tracing (finger or writing tool)
- Larger spaces to write on paper
- Stamping
- Use of pointers for board
- Use of manipulatives
- Kinesthetic activities for relational concepts (behind, in front of, etc.)
- Use of color to draw attention

**Academic**
- Use of pictures
- Manipulatives (blocks, clay, sand)
- Partner work
- Seat next to “model” student
- Smaller teacher-student ratio
- Nonverbal signals for asking for help
- Songs/rhymes to remember concepts
- Reduced workload
- Flashcards
- Motor movements paired with verbal rehearsal of concepts (kinesthetic learning)
- Repetition of instructions, paired with visual aids
- Utilize prompting, multiple choice
- Check for understanding, request whole class responding
Accommodations

**EF/Attention**
- Scheduled, frequent breaks
- Specific, verbal praise
- Smaller class size
- Quiet seating, away from distraction
- Use of behavior chart, token economy
- Motor breaks
- Reduced visual/auditory input
- Visual schedule or velcro chart schedule
- “If/then” board
- State main idea before activity
- State expectation of behavior and model
- Practice good behavior
- Provide incentive/reward for behavior
- Use visual aids/graphs to display concepts
- Provide simple, step-by-step instructions

**Language**
- Provide spelling/word list
- Provide written/verbal/visual instructions
- Speak facing the student
- Pre-teach
- State main idea/purpose before activity
- Make visual graph of main idea/details
- Have child repeat directions
- Provide simple, step-by-step instructions
- Give student extra time to process information
- Highlight important information
- Have student use private signal to ask for help
- Model good speech production
- Reinforce good speech with praise, incentives
Social-Emotional/Behavioral
Use visual “emotional gauge/thermometer”
Implement AM and PM check-ins
AM check-ins: Have students greet each other by name in circle
Encourage students to share/listen to stories
Review expectations before every class
Review visual schedule for the day
Model positive interactions/behavior
Practice after “mistakes”
Provide specific, verbal praise for good behavior
State expectations before every activity
Utilize “cool-down corner” in room, area where students can sit when frustrated
Implement class-wide behavior system
Apply consistent reinforcement
Use simple verbal directions paired with written/visual aids

Accommodations
Prevention Ideas

Back-to-school night education for parents
- Information and health tips
- Getting healthy before pregnancy

Text4Baby
- FREE text alert service
- Week-by-week information and tips
- Available in Spanish and English

Parenting groups
- Psychoeducation and health care
- Local resources
References


Cerebral Palsy

by Kendall Bowles and Linda Huber
Cerebral = brain
Palsy = muscle weakness
Symptoms

- **0 to 2 months old**: difficulty keeping his or her head up; stiff legs or legs that stay straight and scissor together
- **2 to 6 months old**: trouble holding his or her head up; may reach for items with only one hand while fisting the other hand
- **6 months to 2 years old**: inability to crawl, walk, stand or sit.
- **2 to 5 years old**: struggle with activities such as walking, running, sitting, writing and biking; educational development and learning activities may also be affected
- **> 5 years old**: symptoms may appear only as clumsiness or awkwardness. More severe CP may manifest in never walking, running, eating or playing without assistance. Depending on the type of CP, reading or comprehension disorders and other learning disabilities may be an issue.

Other Symptoms
- seizures
- respiratory difficulties
- lethargy
- oromotor
- fine motor
Cerebral Palsy Types

1. Dyskinetic
2. Ataxic
3. Spastic
4. Mixed
Cerebral Palsy Types

**Monoplegia**: Affects one limb, usually an arm.

**Hemiplegia**: Affects one side of the body, including arm, leg, and trunk.

**Diplegia**: Affects symmetrical parts of the body (legs or arms).

**Quadriplegia**: Affects all four limbs.
Research

- caused most commonly by lesions
- continuum of severity
  - movement
  - cognitive abilities
- other related symptoms
  - hearing/vision
  - epilepsy
  - communication deficit
  - behavior problems
Predisposing Factors

- White matter damage is the strongest predictor of cerebral palsy (Kuban et al., 2009).
- Preterm (Romeo, Cioni, Battaglia, Palermo, & Mazzone, 2011)
- First-born (Sauna, 1970)
- Low SES has 50% greater chance (Hjern, & Thorngren-Jerneck, 2008)
- Black and Hispanic White → due to low birth weight (McManus, Robert, Albanese, Sadek-Badawi, & Palta, 2011; Wu, Xing, Fuentes-Afflick, Danielson, Smith, & Gilbert, 2011)
- Smaller cerebellum; corpus callosum (Kułak & Sobaniec, 2007)
Social, Emotional, & Behavioral Factors

- **Social**
  - negative social status (King et al., 2011; Sentenac et al., 2013)
  - have fewer friends
  - peer rejection & social exclusion by teacher and peers
  - recipient of verbal & physical victimization

- **Emotional**
  - Low self-confidence (Lindsay & McPherson, 2012)
  - Begins in preschool (Parkes et al., 2008; Sigurdardottir et al., 2010)
  - Greater chance for psychological disorder diagnosis
    - Except depression!

- **Behavioral**
  - tend to isolate themselves
Cognitive/Academic Factors

**Intelligence**
- 50% have intellectual disability (McIntyre et al., 2011)
- IQ impacts reading and math (Jenks et al, 2009)

**Working Memory and Executive Function**
- Reading difficulties (Updating & Phonological loop,)
- Math difficulties (Updating, Inhibition, & Visuospatial Sketchpad)
- Children with hemiplegia at risk for SLD (Frampton et al., 1998)
Best Practice Accommodations

- **Writing**
  - Alternative technologies to promote independence (e.g., scribe, note-taking assistance, or dictation)

- **Communication**
  - electronic communication board; PECS

- **Sports participation-Inclusion** (Jaarsma et al., 2014)
  - Anerobic fitness
  - Muscle building excersizes
Best Practice Accommodations

- Activities of Daily Living
  - Provide accessible parking, entrances, bathroom
  - Allow use of service animal
  - Automatic door openers
  - Provide portable wheelchair desk
Best Practice Interventions

- **Reading**
  - Computer-Aided Instruction (CAI; Tjus, 2004)

- **Math**
  - Quality Instruction

- **Social-Inclusion**
  - build confidence to share disability (Lindsay & McPherson, 2012)
  - create awareness of bullying and exclusion
    - create a peer support network (Ladd, 2007)
Best Practice Interventions

- **Speech/Language Therapy**
- **Occupational Therapy**
  - writing/grip aids; ergonomic/adapted seating
- **Physical Therapy**
  - Constraint-Induced Movement Therapy (CIMT)
  - splints, braces, serial casting
- **Psychotherapy/Counseling**


References


Childhood Sleep Disorders

Illinois School Psychology Internship Consortium
Presenters:
Steven Malm and Erin Deliberto
At least 30% of parents of otherwise healthy children complain that at some stage, their child’s sleep pattern is a concern (Martin, Hisock, Hardy, et al., 2007). Stein et al. (2001) reported 11% at a given time point.

Children’s sleep disturbances may be the result of or mask serious health problems:
- Obesity, medications, epilepsy, sleep apnea

Less is known about the clinical significance of sleep abnormalities in children compared to adults, but evidence suggests correlations do exist (ADHD, depression) (Stein, Mendelsohn, Obermeyer, et al., 2001).

Sleep quality and duration influence school performance (Stein, Mendelsohn, Obermeyer, et al., 2001).
Categories of Sleep Disorders  (Waters, Suresh, & Nixon, 2013)

Dysomnias: Trouble with going to sleep
- Insomnia
- hypersomnia
- Narcolepsy
- Delayed Sleep Phase Disorder
Categories of Sleep Disorders  (Waters, Suresh, & Nixon, 2013)

Parasomnias: Unusual occurrences during sleep
*common in School-Aged Children (Broughton, 2000)

- Sleep terrors
- Sleepwalking
- Tempromandibular Disorders,
  - Bruxism
  - Parafunctions
- Enuresis
Categories of Sleep Disorders  (Waters, Suresh, & Nixon, 2013)

Behavioral Sleep Disorders: lack of sleep caused by the child’s behavior
  ▶ Behavioral Insomnia: bedtime resistance/refusal
  ▶ Bedtime fears

Respiratory Disorders: sleep disorders caused by abnormal respiration during sleep
  ▶ Obstructive Sleep Apnea: fragmented sleep due to disruption of airways
    ↳ 1-5% between ages 2-8
  ▷ Snoring
Effects on Academics and Behavior

Late bedtimes, early awakenings, poor sleep seriously affects learning capacity, performance, and neurobehavioral functioning (Stein, Mendelsohn, Obermeyer, et al., 2001)

Insufficient sleep has been linked with both behavioral and learning problems at school, and in some studies also obesity (Hisock, et al., 2007; Chen, Beydoun, & Wang, 2008)

Sleep breathing problems is strongly associated with behavioral problems, particularly externalizing/hyperactive behaviors (Rosen et al., 2004).
Effects on Academics and Behavior

Obstructive sleep apnea can result in difficulty concentrating, behavior and mood problems, headaches, and excessive daytime sleepiness (Tan et al., 2013)

Severe sleeping difficulties have been strongly associated with impairments in school performance (Paavonen, et al., 2000)

Sleep deprivation can be dangerous, especially once an adolescent receives his/her driver’s license, as decision-making will be impaired (Dawson, 2005).

Approximately 20% of MVAs in the general population due to driver sleepiness (Marhefka, 2011).
Evidence-Based Interventions

Melatonin treatment
- Increases sleep time and improves sleep quality (Ferracioli-Oda, Qawasmi, and Bloch, 2013)
- Can be safely sustained over a long period of time

Behavioral Interventions for young children: Unmodified extinction, preventive parent education (sleep hygiene), graduated extinction, bedtime fading/positive routines, and scheduled awakenings (Mindell, Kuhn, Lewin, Mellzer, & Sadeh, 2006).

Group Cognitive-Behavior Therapy for adolescent sleep problems (Bootzin & Stevens, 2005)

Several interventions are shown effective for dyssomnias, but limited evidence available for treatment of parasomnias (Bruni & Novelli, 2009)

Insomnia: stimulus control therapy/relaxation and cognitive therapy. Non-benzodiazapine hypnotics are first-line medications (Saddichha, 2010)
General Sleep Hygiene (Everhart, 2011)

Regular bedtime (< 1hr deviation)
  Consistent bedtime routine (not exceeding 30 min.)
  Avoid big meals within 4 hrs of bedtime
  Avoid caffeine within 6 hrs before bedtime
Comfortable bedroom temp.
Keep bedroom dark
Avoid naps during the day (except young children)
Exercise (but not within 2 hours of bedtime)
Avoid emotional conversations or electronic media before bedtime
Keep TV/video game systems out of bedroom
Keep schedule consistent even on weekends.
Other Implications for School

Moseley and Gradisar (2009) and Cain et al. (2011)

- motivational school-based intervention for sleep problems in adolescents

Possible academic accommodations (Circadian Sleep Disorders Network, 2015; Narcolepsy Network, 2013)

- Note-taking assistance
- Extra time on tests
- Modified/flexible class schedule
- Nap time
- Late Start
- Homebound Instruction

Increased academic workload is also associated with later bedtime (Short et al., 2011)

Some schools have tried later start times to improve sleep health (Dawson, 2005)
Home-School Collaboration

May be helpful to offer sleep education sessions for parents

- Parent-set bedtimes → Significantly earlier bedtimes (Short et al., 2011)
  - Just 35 extra minutes of sleep for 8 nights straight led to benefits in neurobehavioral performance

- Help support adolescents change sleep habits (feel more motivated to change)
- Promote awareness- parent may have unwittingly created sleep problems (Stein et al., 2001)
- Teach sleep extinction practices (gradually reducing the time parents spend engaging with the child at bedtime) for younger children (Catherall & Williams-Jones, 2011)

However, parents may not always know that children have sleep problems (Paavonen, et al., 2000)
References


References


Questions
TRAUMATIC BRAIN INJURY

What Educators Need to Know

Maureen Leece, Ed.S., NCSP, CADC & Amanda Skierkiewicz, Ed.S., NCSP
Pre-Doctoral Interns at The INSPiRE Neuropsychology Clinic
The Chicago School of Professional Psychology
WHAT IS A TBI?

Traumatic Brain Injury 101

(Semrud-Clikeman & Bledsoe, 2011)

TYPES OF HEAD TRAUMA

• Acquired Brain Injury (ABI) damage to the brain caused by strokes, tumors, anoxia, hypoxia, toxins, degenerative diseases, near drowning and/or other conditions
• Traumatic Brain Injury (TBI) damage to the brain due to externally inflicted trauma

TYPES OF TBI

• Open—caused by an outside material that penetrates the skull and enters the brain
• Closed—caused by acceleration/deceleration forces that may or may not involve impact of the skull

LEVELS OF TBI

• Mild Traumatic Brain Injury (Glasgow Coma Scale 13 or higher)
  o Accounts for 50-75% of all head injuries
• Moderate Traumatic Brain Injury (Glasgow Coma Scale 9 to 12)
• Severe Traumatic Brain Injury (Glasgow Coma Scale of 8 or less)
  • Pediatric recovery can span 5-6 years post-injury, with the most improvement occurring within 2-3 years

Oregon Center for Applied Sciences (ORCAS)
https://youtu.be/_5hlm3FRFYU
Traumatic Brain Injury 101

PREVALANCE

(CDC, 2014)
PREVALENCE

Traumatic Brain Injury 101

(CDC, 2014)
Indicators of Injury Severity

**Traumatic Brain Injury 101**

*Catroppa & Anderson, 2011*

**GLASGOW COMA SCALE (GCS)**
- Determines responsiveness/consciousness

**DURATION OF LOSS OF CONSCIOUSNESS (LOC)**
- Occurs at time of trauma

**LENGTH OF POST-TRAUMATIC AMNESIA (PTA)**
- Ability to reliably and accurately recall events

**NEUROLOGICAL SIGNS**
- Poor motor control
- Weakness on one side of the body
- Seizures
- Hearing loss

**POSITIVE FINDINGS ON IMAGING**
- Skull fractures
- Blood products (i.e., hematomas)
- Raised intracranial pressure (ICP)
ANATOMICAL TIMELINE

Traumatic Brain Injury 101

(Gioia, n.d.)

INJURY

LOC?

INJURY FACTORS
- Severity (mild, moderate, severe)
- Nature (diffuse, focal)
- Disability

DEVELOPMENTAL FACTORS
- Age at injury
- Developmental stage

PREMORBID FACTORS
- Gender
- Disability/education status
- Personality
- Family functioning
- Parental mental health
- Socio-economic status

RETROGRADE AMNESIA
(Seconds-Hours)

ANTEOROGRADE AMNESIA
(Seconds-Hours)

NEUROCOGNITIVE DYSFUNCTION
(Hours-Days-Weeks+)

INJURY

(Seconds)

Anterograde Amnesia

(After Trauma)

Retrograde Amnesia

(Before Trauma)
SIGNS AND SYMPTOMS

Traumatic Brain Injury 101

(CDC, 2010)
CONCUSSION RECOGNITION & RESPONSE (CRR) app

CONCUSSION?
THERE’S AN APP FOR THAT

CCR: Coach & Parent Version
https://youtu.be/Lc7UxyL3sU8
SCHOOL-WIDE CONCUSSION MANAGEMENT

When a concussion happens to a student, it’s critical that the entire school community—staff, students, and their parents—know how to respond in ways that ensure the student’s best chance of recovery.

The RESOURCE LIST provides all of the resources a school needs for effective concussion management.

USE THE TRAINING PROGRAMS BELOW TO ENSURE THE SAFETY OF YOUR STUDENTS.

COACHES
In 30 minutes, athletic staff can learn how to spot a possible concussion and respond effectively.

EDUCATORS
Staff can learn concussion basics and how to support students when they return to the classroom.

PARENTS
Use this short training to teach your parents what to do if a concussion happens to their child.

TEEN ATHLETES
Teach students about concussions with our fun video program.

www.brain101.orcasinc.com
ImPACT CONCUSSION MANAGEMENT MODEL

(ImPACT Applications, 2015)

STEP 1
Pre-Season Baseline Testing & Education

STEP 2
Concussion is Suspected

STEP 3
Post-Injury Testing & Treatment Plan

STEP 4
Is Athlete Ready for Non-Contact Activity?

STEP 5
Determining Safe Return-to-Play

ImPACT: A Real Life Story
https://youtu.be/bEbbJ42r0YI
PROGRESSIVE ACTIVITIES OF CONTROLLED EXERTION (PACE)

Cognitive Rehabilitation

(Gioia, 2014)

THE GOLDILOCKS PRINCIPE
# ADDRESSING CLASSROOM NEEDS

## Cognitive Rehabilitation

(CDC, n.d.)

## Changes You Can Make Based on Type of Concussion Symptoms

<table>
<thead>
<tr>
<th>THINKING/REMEMBERING</th>
<th>FATIGUE/SLEEP AND PHYSICAL</th>
<th>EMOTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>(such as having difficulty thinking clearly or concentrating, feeling slowed down)</td>
<td>(such as feeling tired, having no energy, having headaches or dizziness)</td>
<td>(such as feeling sad, irritable, anxious)</td>
</tr>
<tr>
<td>• Reduce class assignments and homework to key tasks only and base grades on adjusted work.</td>
<td>• Allow time to visit the school nurse for treatment of headaches or other symptoms.</td>
<td>• Develop an emotional support plan for your students (e.g., identify an adult to whom they can talk if feeling overwhelmed).</td>
</tr>
<tr>
<td>• Provide extra time to work on class assignments.</td>
<td>• Provide rest breaks.</td>
<td>• Locate a quiet place for your students to go to if they feel overwhelmed. And provide information on how they can safely get to this quiet location.</td>
</tr>
<tr>
<td>• Provide written instructions and help for homework and classwork.</td>
<td>• Give your students extra time to go from class to class, to avoid crowds.</td>
<td>• Students may benefit from continued involvement in certain extracurricular activities during their recovery. Identify student and family preferences and consider these activities, approved by their health care provider, in relation to rest time and academic work.</td>
</tr>
<tr>
<td>• Allow extra time to take tests, limit tests to one per day, and/or provide study guides.</td>
<td>• If bothered by light, allow your students to wear sunglasses or sit in a place that is less bright (e.g., draw blinds, sit away from window).</td>
<td></td>
</tr>
<tr>
<td>• Allow your students to show they understand a concept orally instead of in writing.</td>
<td>• If bothered by noise, provide a quiet place for your students to study, take a test, or spend lunch or recess.</td>
<td></td>
</tr>
<tr>
<td>• Provide class notes and/or allow students to use a computer or tape recorder to record classroom information.</td>
<td>• Do not substitute concentration activities for physical activity (e.g., do not assign reading instead of PE).</td>
<td></td>
</tr>
</tbody>
</table>
MODEL OF BRAIN INJURY COGNITIVE REHABILITATION

(Kade & Fletcher-Janzen, 2009)

1. **ENGAGEMENT**
   - Build rapport
   - Conduct psychoeducation
   - Collect baseline assessment

2. **AWARENESS**
   - Develop 5-minute personal narrative
   - Complete symptom and self-efficacy scales
   - Create goals

3. **MASTERY**
   - Identify and reflect on what is helpful
   - Implement specific, individualized interventions
MODEL OF BRAIN INJURY
COGNITIVE REHABILITATION

(Kade & Fletcher-Janzen, 2009)

4. CONTROL
   • Foster internal locus of control and autonomy
   • Respond automatically to environmental cues

5. ACCEPTANCE
   • Develop goals and plans for future
   • Engage in grief/trauma reduction therapies
   • Complete post symptom and efficacy scales

6. IDENTITY
   • Tend to ongoing biopsychosocial needs
PICTORIAL CHILDREN’S EFFORT RATING TABLE (PCERT)

Cognitive Rehabilitation

(Daley, Copeland, Wright & Wales, 2005)
Brief Introduction to SUPERBETTER APP
https://www.youtube.com/watch?v=0nkRk46_HoM

TED Talks: The Game That Can Give You 10 Extra Years of Life—Jane McGonigal
https://youtu.be/lfBpsV1Hwqs
BRAINWAVE-R

Cognitive Rehabilitation

(Malia, Bewick, Raymond & Bennett, 2002)
Sensory Processing Disorder

Christina Piccirillo and Michael Schwartz
What is Sensory Processing Disorder (SPD)

• Complex disorder of the brain in children, adolescents, and adults in which individuals misinterpret sensory information
  • 8 Sensory systems: Visual, Auditory, Tactile, Olfactory, Gustatory, Vestibular, Proprioception, and Interoception
  • Prevalent in 5 - 16% of the population
What is Sensory Processing Disorder (SPD)

• Symptoms can include being *bombarded* by sensory information or *seeking* sensory experiences

• Broad spectrum of severity - when *over* “normal” thresholds of sensitivity, SPD can make individuals at risk for impairments or interfering with daily living skills
What does SPD look like?
What is Sensory Processing Disorder (SPD)

• Many different types of subtypes
• Sometimes can be associated with or misdiagnosed for other disorders including:
  • Autism Spectrum Disorder (56%) Ben-Sasson et al, 2007
  • ADHD (69%) Parush et al., 2007

SOR = Sensory Over-Responsivity
SUR = Sensory Under-Responsivity
SC = Sensory Craving

© 2011

Miller, LJ et al., 2007
SPD Impact in Schools: Under-sensitive

The way SPD impacts students in school can vary greatly between individuals.

- Examples of how it impacts UNDER sensitive individuals:
  - Fidgety or unable to sit still
  - Not understand personal space
  - Constant need to touch people or texture
  - Crave fast, spinning, or intensive movement
  - High tolerance for pain

SPDFoundation.org
SPD Impact in Schools: **Overly Sensitive**

The way SPD impacts students in school can vary greatly between individuals

- Examples of how it impacts OVERLY sensitive individuals
  - Unable to tolerate fluorescent lights and loud noises (e.g. lunchroom)
  - Distracted by background noise others cannot hear
  - Trouble knowing where their body is in relation to objects/people
  - Bump into people or appear clumsy
  - Fearful of surprise touch

SPDFoundation.org
Academic Impact

- Handwriting and subsequent on any writing task
- Distractions of the classroom (e.g., noises, verbal instruction) may provide an appearance of off-task behavior for students.
- Transitioning between classes, subjects may be difficult.
- Academic time missed due to tantrums or meltdowns due to sensory sensitivities.
  - Students with ASD and SPD with auditory filtering problems, sensory under-responsiveness, and sensory seeking have academic problems.

Ashburner et al., 2008
Behavioral Impact

- Avoidant behaviors or excessive overreactions
  - Can be viewed as tantrums
  - Fear, avoidance, distractibility, aggression
- Sustaining attention may be more difficult
- Decreased social skills and participation in play activities

Ben-Sasson, Carter, & Briggs-Gowan, 2009
Social-Emotional Impact

- Internalizing symptoms
  - Anxiety
  - Depression
  - Withdrawal
  - Impaired self-confidence or self-esteem

- Externalizing Behaviors
  - Aggression
  - Activity/Impulsivity

- Adaptive social behaviors
  - Can impact ability to notice/attend and to flexibly respond to multiple, simultaneous and unpredictable input from environment

Ben-Sasson et al., 2009
Assessment

- Not in the DSM because:
  - High prevalence with other disorders, unknown etiology, lack of epidemiological evidence (Ben-Sasson et al., 2009)
  - Desire for more studies to be conducted before inclusion (AAP, 2012)
  - May be identified by an occupational therapist with training in sensory processing and integration; rule out other diagnoses

<table>
<thead>
<tr>
<th>Screening Procedures</th>
<th>Formal Evaluations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent Checklists</td>
<td>Standardized Testing</td>
</tr>
<tr>
<td>Developmental Histories</td>
<td>Clinical Observations</td>
</tr>
</tbody>
</table>
Assessment (List in Handout)

- Screening measures
  - Sensory Profile, Short Sensory Profile and/or Sensory Processing Measure
- Specific Formal Assessments
  - Sensory Integration and Praxis Tests (SIPT)
  - Miller Function and Participation Scales (MFUN)
  - Bruininks-Oseretsky Test of Motor Proficiency™—Second Edition
  - Movement Assessment Battery for Children - Second Edition (Movement ABC-2)
  - Miller Assessment for Preschoolers (MAP)
  - Goal Oriented Assessment of Life Skills (GOAL)
### “Red Flags”

<table>
<thead>
<tr>
<th>Preschoolers</th>
<th>Grade Schoolers</th>
<th>Adolescents/Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Over-sensitive to touch, noises, smells, other people</td>
<td>● Over sensitive to touch, noise, smells, and/or other people</td>
<td>● Over-sensitive to touch, noise, smells, and/or other people.</td>
</tr>
<tr>
<td>● Difficulty making friends</td>
<td>● Easily distracted, fidgety, craves movement; aggressive</td>
<td>● Poor self-esteem; afraid of failing at new tasks</td>
</tr>
<tr>
<td>● Difficulty dressing, eating, sleeping, and/or toilet training</td>
<td>● Easily overwhelmed</td>
<td>● Lethargic and slow</td>
</tr>
<tr>
<td>● Clumsy; poor motor skills; weak</td>
<td>● Difficulty with handwriting or motor activities</td>
<td>● Always on the go; impulsive; distractible</td>
</tr>
<tr>
<td>● In constant motion; in everyone else’s face and space</td>
<td>● Difficulty making friends</td>
<td>● Leaves tasks uncompleted</td>
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<tr>
<td>● Frequent or long temper tantrums</td>
<td>● Unaware of pain and/or other people</td>
<td>● Clumsy, slow, poor motor skills or handwriting</td>
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SPDFoundation.org
Treatment

• Provided mostly by OT’s
• Physical activities to organize sensory system (American Academy of Pediatrics, 2012)
• Sensory integrative approach
  ▶ Vestibular, proprioceptive, auditory, and tactile inputs
  ▶ Improve sensory responsivity, social behavior, motor competence
• Pilot RCT - Child interaction with sensory materials with scaffolding from OT (Miller et al., 2007)
• Listening therapy (LT) - use of sounds to stimulate the brain
• Combination therapy (CT) - OT and LT (http://www.spdfoundation.net/treatment/)
Accommodations

• Changes in environment to help child be more comfortable, secure, and able to focus in the classroom
  ▶ Vision: filters over fluorescent lights, no requirements for eye contact
  ▶ Hearing: headphones, listening to calming music
  ▶ Touch: tactile stimulation
• Planned breaks to help students in busy, loud classes
• Recess and P.E. are important for using built up energy
• Will vary based on students needs- Be creative!
  ▶ Seating, place in line, make use of fidgets
Ethical Concerns

- Occupational therapy may be a limited resource in schools or through insurance coverage
  - It may be important to prioritize effects of sensory problems on daily functioning/activities for student
Cultural Concerns

- Few empirical studies examine ethnic and cultural differences
- Some evidence for differential identification
  - Found a higher rate of prevalence when sample was drawn from urban Head Start program (Reynolds et al., 2008)
  - Did not find differences in SES and prevalence rates for Puerto Rican sample (Roman-Oyola & Reynolds, 2013)
- Children with sensory over-responsivity were more likely to have lower birth weight, gestational duration, minority ethnicity, single or non-employed parent (Ben-Sasson et al., 2009)
Additional Resources

• SPD Foundation: [http://www.spdfoundation.net/](http://www.spdfoundation.net/)
• Book: *Raising a Sensory Smart Child* by Lindsey Bidel OTR/L & Nancy Peske
  • Related Website: sensorysmarts.com
Understanding Seizure Disorders in School-Age Children

T. J. Wills, Clark Kopelman, & Jessica Trach

Presentation for ISPIC Behavior Health Conference Nov. 13, 2015
What is Epilepsy?

Epilepsy is a neurological condition consisting of 2+ unprovoked seizures.

Seizure: abnormally synchronized firing of neurons that interferes with normal patterns.
Important Terms

Idiopathic epilepsy
Secondary epilepsy
Febrile seizures

(Black & Hynd, 1995)
Clinical Symptoms

- Focal seizures
- Absences seizures
- Tonic Seizures
- Tonic-clonic Seizures
Prevalence World Wide

- Approximately 50 million people
- Affects people in low to middle income countries at higher rates
  - Between 4-10 per 1000 people.
  - Some studies of low- and middle-income countries suggest between 7-14 per 1000 people.
- 30 million people have idiopathic epilepsy (WHO, 2015)
"Epilepsy is the most common serious brain disorder worldwide. It has no age, racial, social class, national, or geographic boundaries."

Source: World Health Organization (WHO)
Prevalence United States

- In the United States 4.3 million adults of adults reported some history of seizures
- 750,000 children with a history of seizures (CDC, 2015)
Diagnostic Considerations

- Neurologist
- Brain scans - MRI, CT, EEG
Treatment

- 70% of all people with seizure disorders are successfully treated with medication
- Mono-therapy
- Poly-therapy
- Surgery

(CDC, 2015; Epilepsy Foundation, 2014; WHO, 2015)
Anti-Seizure Medications

- Carbamazepine
- Carbamazepine-XR
- Clobazam
- Clonazepam
- Diazepam
- Divalproex Sodium
- Divalproex Sodium-ER
- Eslicarbazepine Acetate
- Ethosuximide
- Ezogabine
- Felbamate
- Gabapentin
- Lacosamide
- Lamotrigine
- Levetiracetam
- Levetiracetam XR
- Lorazepam
- Oxcarbazepine
- Perampanel
- Phenobarbital
- Phenytoin
- Pregabalin
- Primidone
- Rufinamide
- Tiagabine Hydrochloride
- Topiramate
- Topiramate XR
- Valproic Acid
- Vigabatrin
- Zonisamide

(Epilepsy Foundation, 2014)
Consequences of Epilepsy: Profound and Subtle
Developmental Impacts

- High association with intellectual disabilities
  - Epilepsy may hinder cognitive development (Pastor et al., 2015)
  - May be associated with executive functioning and attentional problems (Kellerman et al., 2015)
- In one sample, 53% had comorbid conditions, including functional difficulties and communication problems (Pastor et al., 2015)
Academic Impacts

- More likely than to experience academic problems compared to non-epileptic peers and students with chronic illnesses (Reilly & Neville, 2011)
  - CNS dysfunction, seizures, medications, child/family response to illness (Rodenburg et al., 2011)
- Academic problems are often neglected due to more pressing medical needs
  - Low academic achievement is more common than academic underachievement (Reilly & Neville, 2011)
    - Discrepancy model approach tends to under-identify these individuals
Social Impacts

- Families of children with epilepsy have more disrupted environments than families of children with other chronic conditions (Rodenburg et al., 2011)
  - Whole family effects
  - Parent-child interactions
- There is limited data on evidence-based psychosocial interventions for children with epilepsy
Mental Health

- Increased risk for complex psychiatric problems, including suicidality (Rodenburg et al., 2011)

- Children with epilepsy have a 21-60% chance of experiencing childhood psychopathology, depending on the type of epilepsy (Ekinki et al., 2009)

- Despite increased risk, there is a substantial unmet need for mental health services
  
  - Approx. 60% of children with epilepsy met criteria for a diagnosis of a psychological disorder, but only 1/3 received any mental health treatment (Ott, et al., 2003)
Treatment Effects

- **Medication**
  - Confusion/disorientation
  - Fatigue, nausea, vertigo, blurred vision
  - Cognitive difficulties (e.g., attention, memory, processing speed)

- **Surgery**
  - Disruption of other neurological systems (e.g., the introduction of new problems)
Cultural Considerations

- Access to treatment (e.g., SES)
- Stigma
  - Child maltreatment
    - Attributed causes of epilepsy
    - Likelihood of utilizing services
- Need for psychoeducation
Responding to Seizures
Seizure First Aid

DON’T

X Hold the person down
X Put anything in their mouth
X Try to give them water, pills, or food

DO

✓ Stay Calm
✓ Remove dangerous objects
✓ Check their breathing
✓ Stay with the person until the seizure is over
✓ Pay attention to how long the seizure lasts
✓ Provide reassurance after the seizure is over
✓ For seizures longer than 5 minutes, call for emergency medical assistance

Epilepsy Foundation, www.epilepsy.com
Supporting Students with Epilepsy at School
Best Practices for Intervention

1. Supports for students with epilepsy are often similar to supports for students with SLD

2. IEP teams need to consider:
   1. The nature of the seizure disorder & its impact on functioning
      1. E.g., type, frequency, and severity of seizures, affected brain areas
   2. Needs in different contexts
   3. Changes over time
Best Practices for Intervention

3. Ongoing, comprehensive assessment

4. Psycho-education for staff, parents & students

5. Address social-emotional needs
   Formal → individual counseling,
   support groups
   Informal → mentoring, check-in
Areas targeted for intervention *may* include:

- Academic skills
- Social skills
- Behavior management
- Strategies for coping with stress (e.g., cognitive-behaviour therapy, relaxation techniques, etc.)
- Helping children understand and make sense of what their diagnosis of epilepsy means to them
- Increasing capacity for self-advocacy

(Bujoreanu et al., 2011)
Tools for Increasing Awareness and Self-Advocacy

Daily Mail (June 16, 2012)
Final Thoughts

Epilepsy is a serious medical condition.

With appropriate treatment and support, most people with epilepsy lead healthy and productive lives!

(Henriksen, 1990)
Questions
Food Allergies

People can be allergic to any food, but there are 8 FOODS THAT CAUSE THE MOST REACTIONS.

1 in 13 children

Includes 5.9 Million Children

15 MILLION Americans have food allergy, a serious medical condition.
Allergies at School

• 8 percent of children in the U.S. have a food allergy (Food Allergy Research & Education, 2013)
  • 40% of children with food allergies have experienced a severe or life threatening reaction
  • Food allergy increased 50% among children age 0–17 years from 1997 through 2013
• Approximately 20-25 percent of epinephrine administrations in schools involve individuals whose allergy was unknown at the time of the reaction (Food Allergy Research & Education, 2015)
• More than 15 percent of school-aged children with food allergies have had a reaction in school (Food Allergy Research & Education, 2015)
Relevant Laws

- Good Samaritan Law
- Section 504 of the Rehabilitation Act
- Americans with Disabilities Act
  - Extends 504s to the private sector
- Individuals with Disabilities Education Act
  - May contribute to OHI eligibility
Section 504

- Food allergies may meet the criteria of “substantially limiting” one or more major life activities or bodily function
- Students with allergies entitled to a 504 evaluation
Prevention & Early Intervention

- School-wide education about allergies
- Clear, consistent signage
  - “This is a peanut-free zone”
  - “Please wash your hands and brush your teeth after eating tree nuts!”
- Emergency Action Plan for known allergies
- Epi pens
  - Illinois Emergency Epinephrine Act PA97-0361
- Proactive planning for unusual situations
  - Parent communication
Peanut-Free Zone

Please do not bring any peanuts or products containing peanuts into area.

Thank you for helping to keep our children safe!
FOOD ALLERGY & ANAPHYLAXIS EMERGENCY CARE PLAN

Name: ___________________________  D.O.B.: ___________________________

Allergy to: ___________________________

Weight: ___________________________  lbs.  Asthma: { [ ] Yes (higher risk for a severe reaction)  [ ] No }

NOTE: Do not depend on antihistamines or inhalers (bronchodilators) to treat a severe reaction. USE EPINEPHRINE.

Extremely reactive to the following foods: ___________________________

THEREFORE:
[ ] If checked, give epinephrine immediately for ANY symptoms if the allergen was likely eaten.
[ ] If checked, give epinephrine immediately if the allergen was definitely eaten, even if no symptoms are noted.

FOR ANY OF THE FOLLOWING:

SEVERE SYMPTOMS

LUNG
Shortness of breath, wheezing, repetitive cough

HEART
Pall, blue, faint, weak pulse, dizzy

SKIN
Many hives over body, widespread redness

GUT
Repetitive vomiting, severe diarrhea

MOUTH
Significant swelling of the tongue and/or lips

THROAT
Tight, hoarse, trouble breathing, swelling

OTHER
Feeling something bad is about to happen, anxiety, confusion

OR A COMBINATION

OF SYMPTOMS FROM DIFFERENT

BODIES AREAS.

1. INJECT EPINEPHRINE IMMEDIATELY.

2. CALL 911. Tell them the child is having anaphylaxis and may need epinephrine when they arrive.

- Consider giving additional medications following epinephrine:
  - Antihistamine
  - Inhaled (bronchodilator) if wheezing
  - Lay the person flat, raise legs and keep warm. If breathing is difficult or they are vomiting, let them sit up or lie on their side.
  - If symptoms do not improve, or symptoms return, more doses of epinephrine can be given about 5 minutes or more after the last dose.
  - Alert emergency contacts.
  - Transport them to ER even if symptoms resolve. Person should remain in ER for at least 4 hours because symptoms may return.

MILD SYMPTOMS

NOSE
Itchy/runny nose, sneezing

MOUTH
Itchy mouth

SKIN
A few hives, mild itch

GUT
Mild nausea, discomfort

FOR MILD SYMPTOMS FROM MORE THAN ONE SYSTEM AREA, GIVE EPINEPHRINE.

FOR MILD SYMPTOMS FROM A SINGLE SYSTEM AREA, FOLLOW THE DIRECTIONS BELOW:

1. Antihistamines may be given, if ordered by a healthcare provider.

2. Stay with the person; alert emergency contacts.

3. Watch closely for changes. If symptoms worsen, give epinephrine.

MEDICATIONS/DOSES

Epinephrine Brand: ___________________________

Epinephrine Dose: [ ] 0.15 mg/IM  [ ] 0.3 mg/IM

Antihistamine Brand or Generic: ___________________________

Antihistamine Dose: ___________________________

Other (e.g., inhaler/bronchodilator if wheezing): ___________________________

PARENT/GUARDIAN AUTHORIZATION SIGNATURE: ___________________________  DATE: ___________________________

PHYSICIAN/PHD AUTHORIZATION SIGNATURE: ___________________________  DATE: ___________________________
School-wide Education

- Example: **Be a P.A.L.**
  - Free program from Food Allergy Research & Education (FARE)
  - www.foodallergy.org
  - Student and parent handouts
  - Posters, presentation guides, etc.

- **Food Allergy Awareness Week**
  - May 8-14, 2016
The Bottom Line

Current best practice management of allergies in all settings includes:

1) Strict avoidance of allergens
2) Immediate access to rescue medication

(Cummings, Knibb, King, & Lucas, 2010)
Psychosocial Effects

- Decreased Quality of Life (QoL)
  - Females
  - Children with more allergies and more reactions
  - Lower QoL for peanut allergy than insulin-dependent diabetes (Avery, King, Knight, Hourihane, 2003)
- Increased anxiety, depression, and stress (Kolves, Barker, & De Leo, 2015; Leher et al., 2002; Paul, 1993)
  - Cognitive behavioral mechanism
  - Anxiety as a protective factor?

(Cummings, Knibb, King, & Lucas, 2010)
Psychosocial Effects

- Impact on family activities and social events
  - Increased vigilance
- Impact on school attendance
- Social isolation

(Cummings, Knibb, King, & Lucas, 2010)
Bullying (Lieberman, Weiss, Furlong, Sicherer, & Sicherer, 2010)

- 24% of respondents bullied, teased, or harassed because of food allergy
- 82% of episodes occurred at school and 80% were perpetrated mainly by classmates
- 21% of those who were bullied, teased, or harassed reported the perpetrators to be teachers or school staff
- Of those bullied, 57% described physical events, such as being touched by an allergen and having an allergen thrown or waved at them, and several reported intentional contamination of their food with allergen
Additional Concerns

- Low self-esteem
- Negative behavior
- Eating disorders
- Oppositional behavior/non-compliance

(Centers for Disease Control, Voluntary Guidelines)
Accommodations

- Meal substitutions required when need is certified by a licensed physician (USDA regulations)
- Alternate settings that limit isolation
- Normalize precautions
  - e.g., universal handwashing after meals
Individual/Group Interventions

- Support groups for students with allergies and chronic illnesses
- Individual counseling
  - Cognitive behavioral therapy
  - Anxiety-focused treatment
- Teach self-advocacy skills
- Empower student to help educate peers
References


Autoimmune Conditions

“According to all our tests, your immune system is out to lunch.”
Autoimmune Conditions

- The body attacks and destroys healthy tissue
- Over 80 conditions

The body cannot distinguish healthy and unhealthy tissue

The immune system destroys healthy tissue

BUT the exact reason this happens is not known

**Hypothesis**: a predisposition (e.g., genetics, underlying condition) is triggered (e.g., by a virus) resulting in maladaptive immune response
When the immune system goes awry….

- Body tissue can be destroyed
- Abnormal growth of tissue can happen
- Organ function can change
- Normal immune function can be compromised
Examples

- Celiac Disease
- Multiple Sclerosis
- HIV
Celiac Disease

- Ingestion of gluten leads to damage in the small intestine
- Hereditary
- Prevalence: 1 in 100

https://celiac.org/celiac-disease/what-is-celiac-disease/
Considerations at School: Celiac Disease

- Awareness
- Snack/mealtimes
- Developmental and learning considerations
- Emotional considerations
Multiple Sclerosis

- Central Nervous System is attacked, resulting in disrupted nerve functioning
- Symptoms can be both temporary and permanent
- Symptoms are wide ranging
- Commonly diagnosed between 20-40 years old, but can impact anyone regardless of age
Considerations at School: Multiple Sclerosis

- Physical impact
- Educational impact
- Social impact
- Psychological impact
Human Immunodeficiency Virus (HIV)

- Virus that weakens immune system by attacking/destroying CD4 or T-cells

- 3 stages of HIV: Acute infection, Clinical Latency, Acquired Immunodeficiency Syndrome (AIDS)

- More than 1.2 million living with HIV in US; 17% between the ages of 13 and 24

- Acquired either perinatally or behaviorally

Centers for Disease Control and Prevention [CDC], 2013; CDC, 2015
Considerations at School: HIV

- Physical impact
- Cognitive Impact
- Educational Impact
- Social Impact
- Psychosocial Impact
- Disclosure Issues
Autoimmune Conditions
General Considerations

- Cognitive functioning may (or may not) be impacted
- Students may have elevated risk for mood disorders
- Students may miss instructional time due to fatigue, hospitalizations, medical treatments, or feeling ill
- Social interactions may become strained
References


Centers for Disease Control and Prevention [CDC], 2013; CDC, 2015


Pediatric Oncology

Gabriela Garibay, Ed.S.
Lauren E. Moss, M.A.
Overview of Childhood Cancer

- Approximately 1:285 children will be diagnosed with cancer before turning 20-years-old
- Cancer is the most common cause of death by disease in children, and the second leading cause of death in children (after accidents)
- Overall five-year survival rate is approximately 80%
- Leukemias are the most common type of childhood cancer (40%)
  - Acute lymphoblastic leukemia (ALL) is the most common leukemia in children
- Brain and central nervous system (CNS) tumors are the second most common type of childhood cancer (27%)
  - (American Childhood Cancer Organization [ACCO], 2015)
Incidence Rates (American Cancer Society, 2014)
Signs and Symptoms

- Unusual mass or swelling
- Unexplained paleness or loss of energy
- Increased bruising or bleeding
- Persistent, localized pain or limping
- Prolonged, unexplained fever or illness
- Frequent headaches, often with vomiting
- Sudden eye or vision changes
- Excessive, rapid weight loss

(American Cancer Society, 2015)
Treatments

- Surgery
- Radiation Therapy - uses high doses of radiation
- Chemotherapy - uses drugs
- Immunotherapy - uses substances from living organisms
- Targeted Therapy - targets changes in cancer cells that contribute to their growth, division, and spreading
- Hormone Therapy - used to treat cancers that use hormones to grow
- Stem Cell Transplant - used to restore stem cells destroyed by chemotherapy and radiation therapy

(National Cancer Institute, 2015)
Academic Implications

→ Children with brain cancer experience academic achievement difficulties
  ◆ Attributed to hydrocephalus, not radiation dose, extent of surgery, or chemotherapy (Mabbott et al., 2005)
  ◆ Performance declines observed across subjects (spelling, math, and reading)
→ Chemotherapy can result in hearing loss, which impacts speech and language development and academic achievement, especially in young children (Gilmer Knight, Kraemer, & Neuwelt, 2005)
Difficulties with focus and attention can contribute to learning problems (Schultz et al., 2007)

- Especially in children with leukemia or CNS tumors
- Missing school due to treatment can lead to academic problems
Psychosocial Effects of Pediatric Cancer

➔ The chronic strains of childhood cancer negatively impact social and psychological adjustment
  ✔ Treatment-related pain
  ✔ Nausea and vomiting
  ✔ Visible side effects such as hair loss, weight gain or loss, and physical disfigurement

➔ Common psychological difficulties in children who experience cancer may include anxiety, panic, inhibited and withdrawn behavior, intense stress, somatic complaints, and post-traumatic stress disorder

➔ Social difficulties at school may be related to peer relationship difficulties, loss of independence, worries about the future in relation to career, and relationships

(McDougal, 1997)
Factors That Affect Psychosocial Functioning

Disease Site

Age

Ongoing care

(Marcus, 2012)
Factors That Affect Psychosocial Functioning

➔ Families alter their roles, responsibilities, and family functions to accommodate the child with cancer
➔ Significant stress on the family, particularly for the mother
↓ Parent depression is the most significant factor associated with impairment in family functioning

(Marcus, 2012)
Cognitive Development and Coping Skills

Early Childhood

➔ Understand they are ill and feeling “bad,” but may not understand tumor treatment is making them feel this way
➔ May not understand the reasons for multiple procedures that cause pain

Grade School

➔ Has a concrete understanding that he or she is sick and needs treatment

High School

➔ May find information on disease or treatment, but still have difficulty with meaning and impact
➔ Difficulty accepting disfiguring or debilitating treatments

(Marcus, 2012)
Best Practices in School for Cancer Survivors

➔ Use school records and past assessments as baseline data
➔ Repeated evaluations at 12-18 month intervals should be standard care
➔ Careful thought should be given to the measures in an evaluation-full neuropsychological evaluation may be warranted
➔ Short and regular content specific assessments in the classroom should be included
➔ Technological support (i.e. books on tape and voice recognition software)
➔ Extra time for a student with hemiparesis
➔ Providing untimed tests and oral assessments

(Butler & Mulhern, 2005)
Best Practices in School for Cancer Survivors

- Comprehensive school health plan
- Constant communication between school and hospital
- In-service for school staff on pediatric cancer
- Classroom presentations that are age appropriate are most effective
- Provides straightforward, reassuring answers to children’s questions to help turn anxious classmates into supportive friends
- Address myths and reduce fear and confusion

(Childhood Cancer Canada Foundation, 2011)
School Re-entry

- Review any medications that are needed
- Special devices the student may use
- Emergency management of possible problems
- Communication with hospital liaison

Stony Brook University Medical Center's School Re-entry Program

https://www.youtube.com/watch?v=bJ1AEDqrDgE
BOOKS

- Jacob Has Cancer: His Friends Want to Help
- When Someone You Love Has Cancer: A Guide to Help Kids Cope
- IMAGINE: What's Possible
References and Resources


References Continued

➔ Stony Brook University Medical Center. [sbcomm]. (2010, March 24). Stony Brook Medical Center’s school re-entry program [Video file]. Retrieved from https://www.youtube.com/watch?v=bJ1AEDqrDgE
Thank you!

For Attending our Presentation