

PANS - Pediatric Autoimmune Neuropsychiatric Syndrome

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Diagnosed with PANS

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Disclosure

We have no financial relationships with ineligible companies to disclose.

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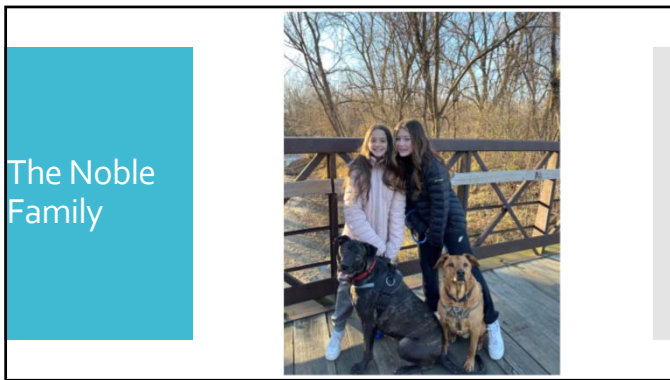
Objectives

- Empathize with the patient journey from the onset of symptoms through diagnosis and treatment/maintenance
- Differentiate between PANS and PANDAS
- Recognize PANS/PANDAS as a diagnostic possibility when a young patient presents with sudden-onset OCD or other related symptoms.
- Describe the initial workup of PANS/PANDAS

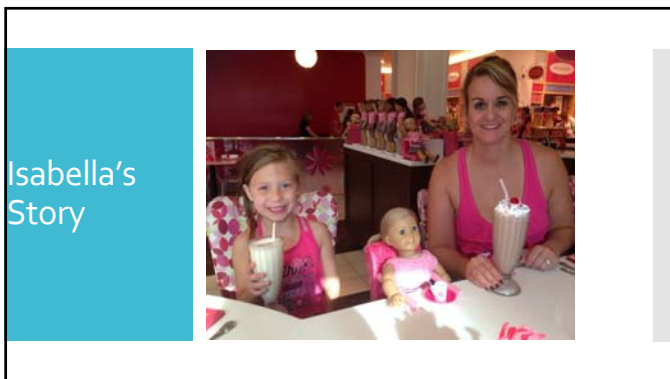
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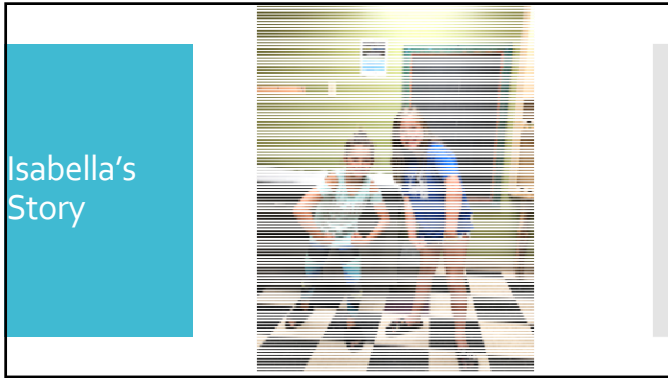
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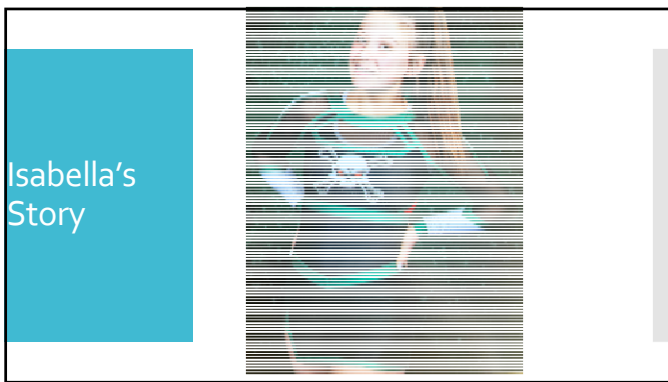
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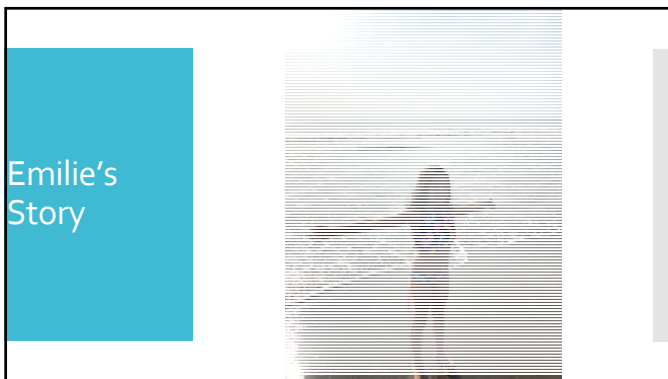
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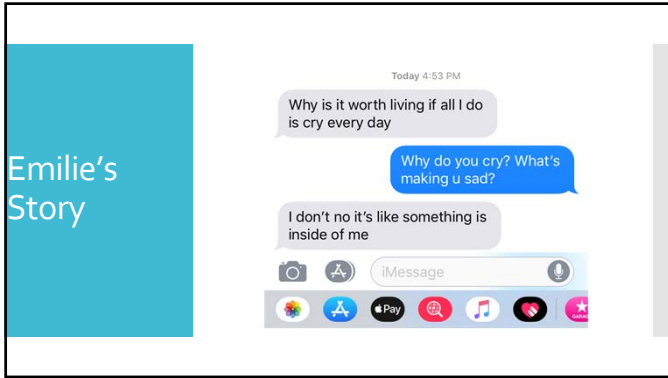
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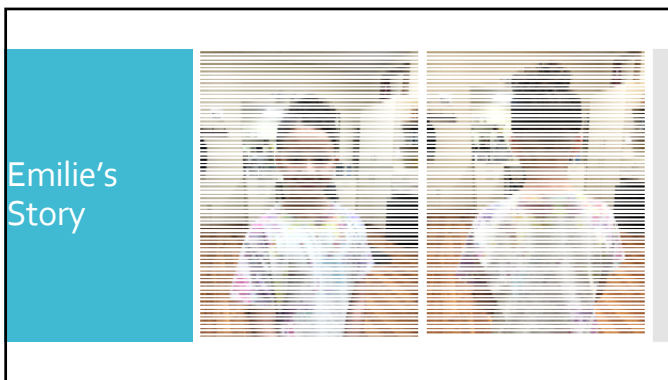
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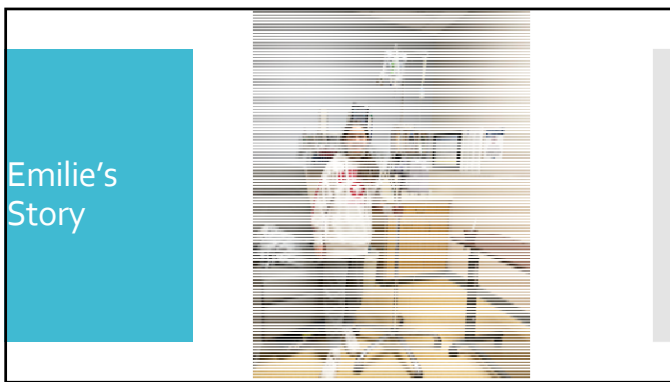
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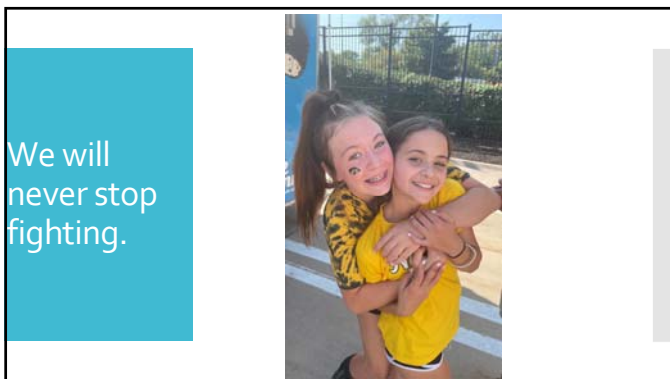
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Sydenham's Chorea

[Sydenham's Chorea-video1 - YouTube](#)

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PANS
TICS

[Gabe PANDAS tics - YouTube](#)

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PANDAS

- Streptococcus specific
- Can have a primary tic presentation

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PANS

- No clear trigger
- Possible infectious triggers: Mycoplasma, Lyme, viruses (influenza, EBV)
- Food triggers?
- Primary OCD/anorexia presentation

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Symptoms

- Abrupt, dramatic onset or recurrence of OCD
- Acute-onset anorexia and/or severe, restrictive eating disorders – alternative manifestation of OCD
- Two of the following neuropsychiatric symptoms (acute onset and concurrent presence)
 - Anxiety (separation anxiety common)
 - Sensory or motor abnormalities
 - Behavioral regression
 - Deterioration in school performance
 - Emotional lability
 - Urinary symptoms
 - Sleep disturbances

Swedo et al, Ped Ther, 2012; Frankovich et al, J child Adol Psychopharm, 2015

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Other symptoms

- Tics
- Aggressiveness
- Deterioration in handwriting
- Bedwetting
- Hyperactivity
- Dilated pupils
- Brain fog
- Deterioration in writing
- Poor coping
- Deterioration in math skills

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Differential Diagnosis

- Sydenham chorea
- Encephalitis
- Abuse, psychological trauma
- Toxin, medications, illicit drugs
- Tumors, stroke
- Tourette's, OCD – not acute

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Age of Onset

- 1-3 years (11%)
- 4-9 years (69%)
- 10-13 years (19%)
- 14+ years (1%)

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Labs

- Throat culture
- ASO titer (40% have no titer elevation)
- DNaseB
- Vitamin D
- Mycoplasma titers
- Lyme titers
- CRP
- Celiac screen
- Immune globulin levels
- Consider culturing family

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Treatment

- Antimicrobial treatment
- Immunomodulatory treatment
- Psychotherapeutic treatment
- Team approach with child psychiatry, immunology, allergy, pediatric neurology and rheumatology

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Antimicrobial Treatment

- GAS infections – Perianal dermatitis, vulvovaginitis, impetigo, pharyngitis, scarlet fever
- Penicillin V PO for 10 days (250 mg – 500mg)
- Amoxicillin PO for 10 days (50 mg/kg, max 1 g)
- Benzathine penicillin G IM once (<27 kg: 600,000 U, >27 kg: 1.2 million U)
- If allergic to PCN use cephalexin cefadroxil, clindamycin, azithromycin, clarithromycin
- Continue prophylaxis for PANDAS for 1-2 years (some up to 18 years if severe case)

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Immunomodulation

- Azithromycin reduces secretion of inflammatory cytokines
- Effective for PANS (GAS, Lyme, mycoplasma)
- Clavulanic acid also shown to have anxiolytic and anti-depressive properties
- IVIG
- Steroids
- NSAIDS

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Diet : Microbiome

- When you balance gut flora, there will be a positive effect on the immune and nervous system
- 1) Eliminate gluten and casein
- 2) Avoid sugar, synthetic additives, colorings, preservatives
- 3) Avoid hormones, antibiotics and pesticides
- 4) Add fermented foods, plants, herbs and spices

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Immunomodulation: Supplements

- Probiotics
- Consider Candida overgrowth
- Xylitol
- Mg/B6
- OM 3 FA
- LDN


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Psychotherapeutic

- Low dose SSRIs, increase dose slowly
- Screen time fasts
- Exercise
- Sleep hygiene
- Nature/sunshine

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Art pre- and post-treatment



Panel A - Drawing produced during an acute exacerbation of OCD and other symptoms of PANDAS which appears quite messy and immature.
Panel B - Age-appropriate picture drawn after treatment with IVIG and symptomatic improvement.

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Case presentation:

- 6 year old male
- Super Bowl Sunday 2019
- Acute onset tics, OCD, separation anxiety, nightmares

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PMH

- Term vaginal delivery with BW 8#140z
- Breast fed 16 months
- Cradle cap
- At least 2 episodes of perianal strep
- Many episodes of OM
- Constipation
- Speech therapy
- No hospitalizations or surgeries

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Family History

- Mom has anxiety and OCD
- MGF and anxiety, OCD and tics

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Social History

- Mom dental hygienist
- Dad supply operations for 3M
- 9 year old brother
- Expecting a new baby

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Diet

- Chicken nuggets, pizza, cereal, toast, eggs, bananas, strawberries, chips, animal crackers, milk, water, cheeseburgers.
- Avoid red dyes

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Course of illness

- October 2020 Psychiatric evaluation
- Not autism
- Clonidine improved sleep
- November 2020, elevated strep and mycoplasma titers
- Seen by PANS provider in Bloomingdale (30 day rotation each: keflex, augmentin, cefdinir, zithromax, amoxicillin). LDN 1.5 mg. Brain MRI negative. No improvement

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Laboratory

- ASO 56 (0-240)
- AntiDNase B 186 (0-375)
- Mycoplasma IgG and IgM positive
- SARS Ab negative
- ANA+
- TSH normal
- Tissue transglutaminase IgA negative
- Immune globulin levels normal
- Ferritin 14
- Vitamin D 70
- CBC normal
- Cu, Zn normal

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Initial management

- Rifampin 300 mg twice a day for 21 days
- Clonidine 0.1 mg QHS
- LDN 1.0 mg QHS
- Aleve 220 mg BID
- Child Psychiatry referral
- Immunology/allergy referral
- Dietary recommendations

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Course:

- Zithromax 250 mg daily
- Lexapro 5 mg daily
- LDN 1.5 mg daily
- Sulindac 75 mg BID
- Whole foods diet, GF,DF, dye free
- Tics, OCD, aggression have resolved. Very loving with new sister

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References

IVIG Treatment Protocol at <https://www.pandisoon.org>

PANIS/PANDAS Flowcharts for Diagnosing and Treating at www.pandisoon.org/flowchart

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(This article has a particularly helpful appendix with treatment protocols including NSAIDs, steroids, IVIG, ect)

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