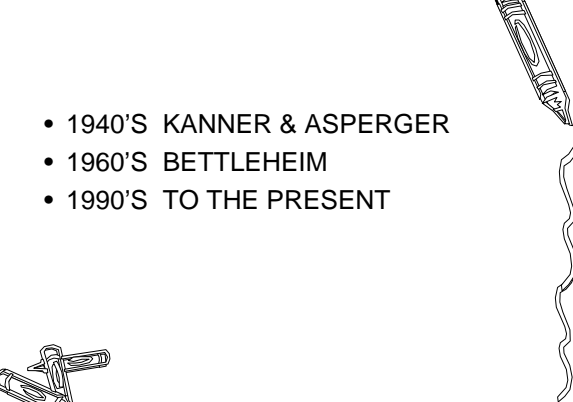
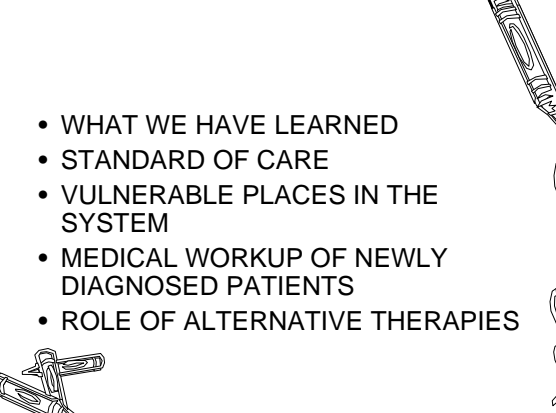


AUTISM
A DEVELOPMENTAL
PEDIATRICIAN'S PERSPECTIVE
DIANE M. DANIS, M.D., M.P.H.



- 1940'S KANNER & ASPERGER
- 1960'S BETTLEHEIM
- 1990'S TO THE PRESENT

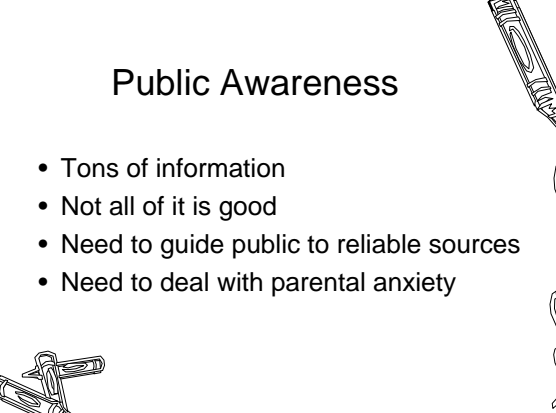


- WHAT WE HAVE LEARNED
- STANDARD OF CARE
- VULNERABLE PLACES IN THE SYSTEM
- MEDICAL WORKUP OF NEWLY DIAGNOSED PATIENTS
- ROLE OF ALTERNATIVE THERAPIES



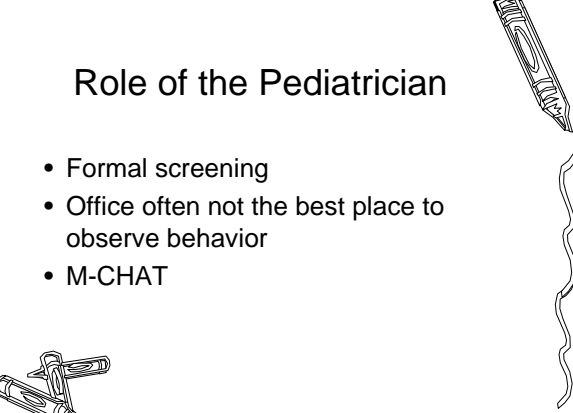
**SCREENING FOR
AUTISM**

- PUBLIC AWARENESS
- PEDIATRICIANS
- CAREGIVERS, DAYCARE PROVIDERS, PRESCHOOL TEACHERS



Public Awareness

- Tons of information
- Not all of it is good
- Need to guide public to reliable sources
- Need to deal with parental anxiety



Role of the Pediatrician

- Formal screening
- Office often not the best place to observe behavior
- M-CHAT

Critical Questions on the M-CHAT

- Does your child take an interest in other children?
- Does your child ever use his/her index finger to point/ask for something?
- Does your child ever bring objects over to you to show you something?
- Does your child imitate you?
- Does your child respond to his/her name when called?
- If you point to a toy across the room, does your child look at it?

A few problems remain...

- Not all children have a medical home
- Not all primary care physicians are trained in child development

CAREGIVERS, PRESCHOOL TEACHERS, DAYCARE PROVIDERS

- THE ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT ESTIMATED IN 2001 THAT 61% OF MOTHERS (CHILDREN <6 YEARS OLD) WERE WORKING

SPEECH PATHOLOGISTS

- Unsung heroes of autism
- Often the first referral when there are concerns
- Not as threatening as other referrals
- Can refer for further diagnosis

DIAGNOSIS OF AUTISM

- REGIONAL CENTER
- SCHOOL DISTRICT
- PRIVATE SECTOR

Best Practice Standards

- Interview ... ADI-R
- Structured Observation ... ADOS
- Measure of Cognitive Abilities Bayley or Mullin Scales
- Adaptive function

There are some problems....

- Sometimes it's hard to get a diagnosis before 2 years of age
- Significant wait times
- Not everyone has access to services in the private sector

SOME REAL WORLD CHALLENGES TO EARLY DIAGNOSIS

- SOME KIDS JUST DON'T FIT EASILY INTO A DIAGNOSTIC BOX
- IT CAN TAKE TIME TO SORT OUT THE DIAGNOSIS
- DOES THE SYSTEM TOLERATE AMBIGUITY?
- SHOULD SERVICES BE BASED ON AREAS OF NEED RATHER THAN ON DIAGNOSIS?

TREATMENTS FOR AUTISM


- ABA, PRT
- FLOOR TIME, RDI
- THERAPEUTIC CLASSROOM
- OT
- SPEECH AND LANGUAGE THERAPY

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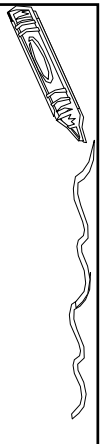
AUTISM IS A BIOLOGICALLY BASED CONDITION

- WE DEFINE AUTISM BEHAVIORALLY
- WE DIAGNOSE AUTISM BEHAVIORALLY
- WE TREAT AUTISM BEHAVIORALLY


- GENES: twin studies, other known genetic syndromes with autistic features, increasing information about microdeletions and duplications
- BRAIN: lots of evidence that the brains of children with autism are different - increased brain size, seizure activity, decreased perfusion, differences in neuronal pruning that goes on in the first months of life




- Because we know the importance of the genetic component of autism, we test chromosomes and look for Fragile X.
- More geneticists are recommending array based comparative genomic hybridization studies



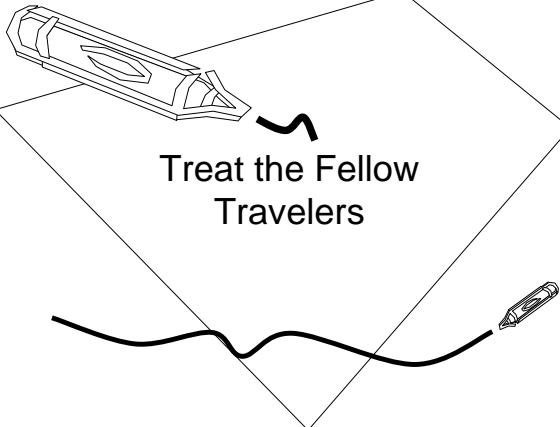
- But is that all there is?
- GENES affect the BRAIN which affects BEHAVIOR




- CHRONIC GI PROBLEMS
- SLEEP PROBLEMS
- ALLERGIES
- FAMILY HISTORY OF ALLERGY AND AUTOIMMUNE DISEASE



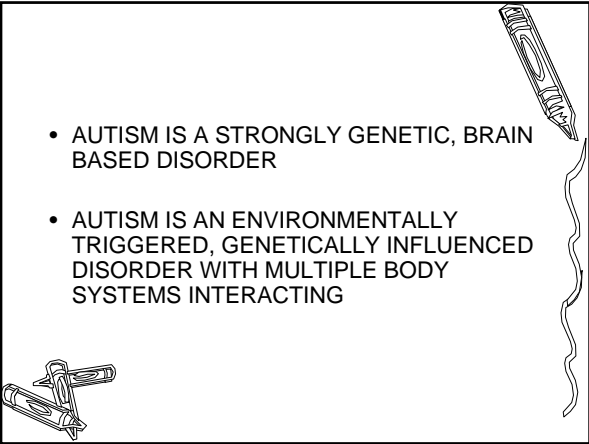
- There is some evidence that more children than we know with autism have mitochondrial disorders.



Treat the Fellow Travelers

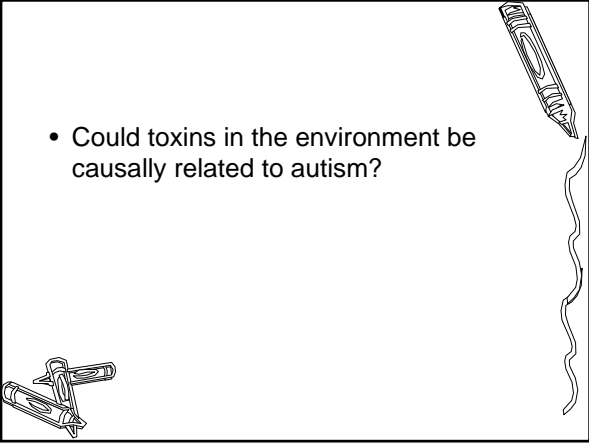


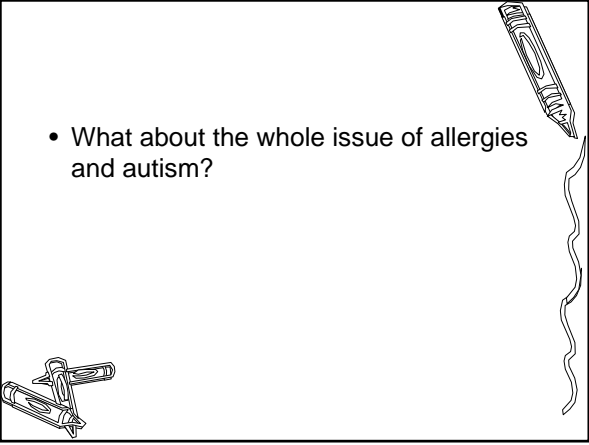
- IS AUTISM A DISORDER OF THE BRAIN?
- IS AUTISM A DISORDER THAT EFFECTS THE BRAIN?

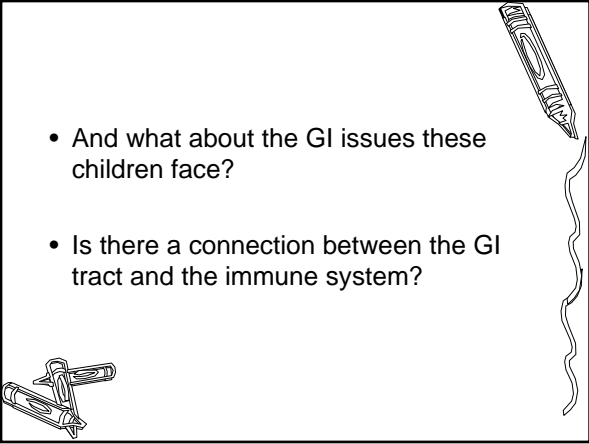
- 
- AUTISM IS A STRONGLY GENETIC, BRAIN BASED DISORDER
 - AUTISM IS AN ENVIRONMENTALLY TRIGGERED, GENETICALLY INFLUENCED DISORDER WITH MULTIPLE BODY SYSTEMS INTERACTING



BALL OF
CONFUSION!!!!

- 
- Could toxins in the environment be causally related to autism?


- 
- What about the whole issue of allergies and autism?

- 
- And what about the GI issues these children face?
 - Is there a connection between the GI tract and the immune system?





Role of Nutrition in Autism

- Many of these children have significant feeding/dietary issues.
- Important to insure excellent micronutrition.
- There may be a role for large doses of vitamins and minerals...much work remains to be done in this area.





Medical Work-up

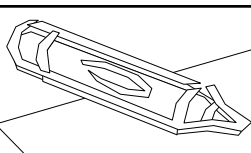

- CBC, Chemistry panel
- Ammonia, lactate, pyruvate
- Serum amino acids
- Urine organic acids
- Iron studies
- Thyroid studies
- Lead, zinc levels



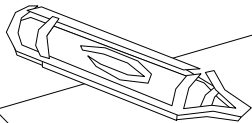

- EEG if history of language regression
- MRI if focal neurological signs
- chromosomal analysis for Fragile X
- Consideration for getting more in depth genetic testing (array based comparative genomic hybridization)



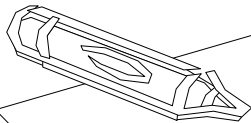

- ALLERGY TESTING
- STOOL ANALYSIS
- TOXIC AND NUTRIENT MINERALS



THESE ARE AMAZING,
COMPLEX CHILDREN



WE NEED TO MAKE HARD
DECISIONS ABOUT PROVIDING
EQUAL ACCESS TO HIGH QUALITY
CARE



WE NEED MORE CLINICALLY
RELEVANT RESEARCH ON ALL
KINDS OF TREATMENTS FOR THESE
KIDS

