

Biomedical approach to Autism Spectrum Disorder

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Autism Spectrum Disorder (ASD)

A group of pervasive developmental disorders which include Autism, Asperger's and Rett's syndrome. They are characterised by a restrictive, stereotypical pattern of behaviours which impair social interaction, verbal and non verbal communication.

Autism

A developmental disability that affects verbal and non verbal communication and social interaction. It usually appears before the age of three and adversely affects educational performance.

Asperger's Syndrome

A pervasive developmental disorder often called “high functioning autism”. They have a higher intellectual capacity while suffering from impaired social capacity.

Rett's Syndrome

A genetic disorder of developmental arrest. It is thought to occur when neurons and their connections are disrupted at a crucial stage of brain development. It usually occurs toward the end of pregnancy or during the first few months of life.

Incidence

- 1 in 6 children have a behavioural problem
- 1 in 120 diagnosed with ASD
- Autism increased 1500%

Other disorders

- Asthma 300%
- ADHD 500%
- Allergies 700%
- Anxiety, depression, irritable bowel, ear infections, skin rashes

Still awake??

A new paradigm of overlapping illnesses that are characterised by gut-immune-brain dysfunction

MINDD

Metabolic, Immunological, Neurological, Digestive, Disorders

A foundation whose vision is to promote and integrative approach to health focusing on biomedicine, nutrition and allied health therapies.

www.mindd.org

An old idea!!

“All illness starts in the gut”
Hippocrates

Oxidative stress

Oxygen molecules with unpaired electrons (free radicals) that attach to proteins, DNA and cell walls causing damage.

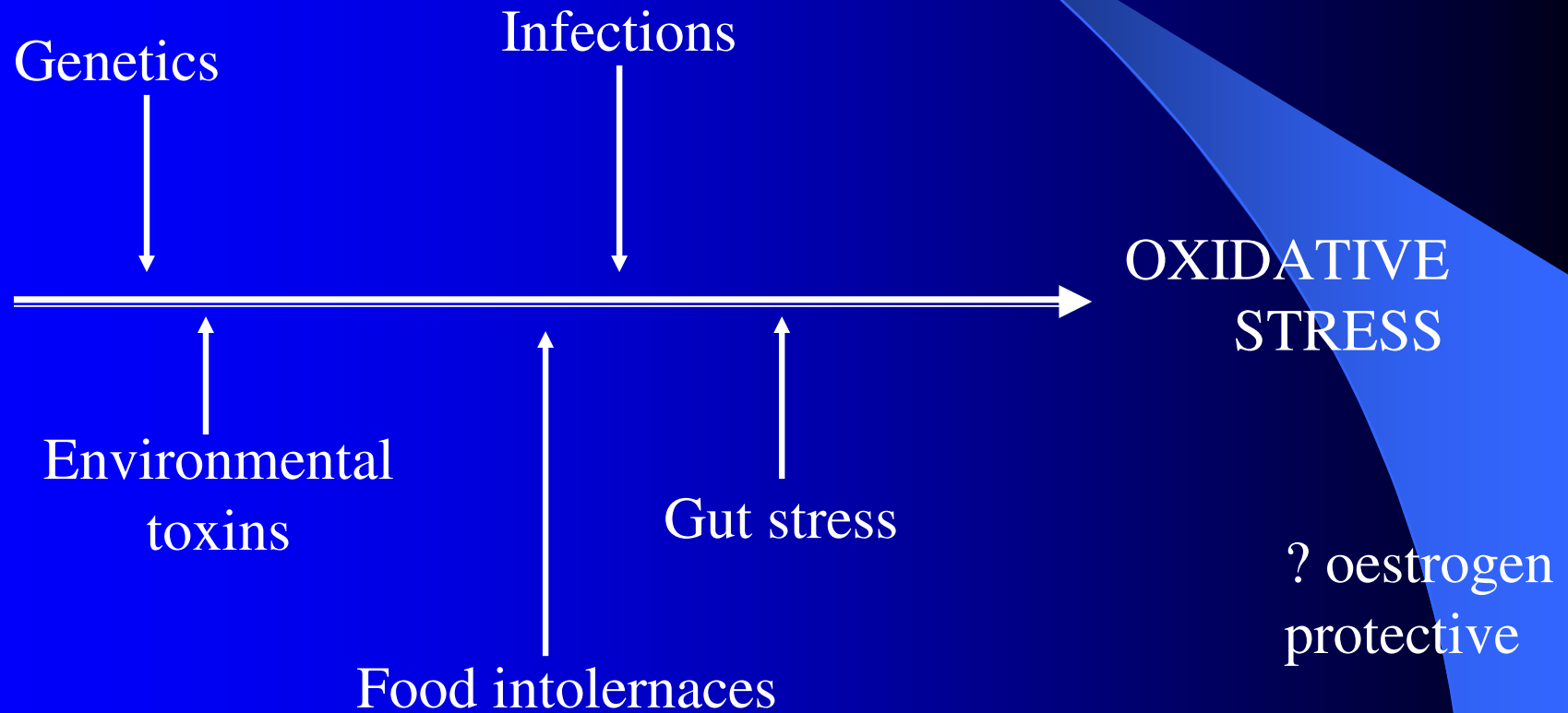
STRESSED NOW!!

Oxidative Stress

Leads to inflammation →

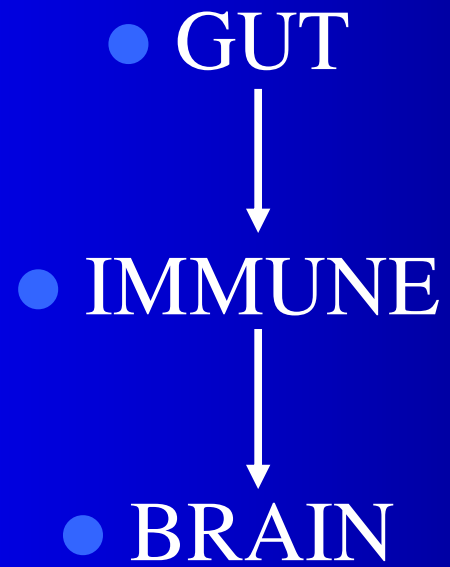
- Gut- Food intolerances, digestive disorders
- Skin- eczema
- Lungs- asthma
- Brain- ASD

Time Line



Timing-age-severity-duration

The Link



THE GUT

Common symptoms in children with ASD

- Diarrhoea
- Constipation
- Bloating and tummy pain
- Reflux

“Leaky Gut”

- Oxidative stress causes leaky gut. This means increased gut wall permeability.
- Therefore some nutrients are malabsorbed while others can “leak” directly into the bloodstream and act as toxins eg gluten.

“Gut Dysbiosis”

- This is when important protective bacteria in the gut wall are depleted and “bad” bacteria and fungi overgrow.
- Affects not only the gut but other systems too (eg. mood and sleep, cravings)

IMMUNE

The gut functions as 70 % of your immune system!!

Immune dysfunction

Occurs as a result of →

- Gut dysfunction
- Effect of toxins
- Skewed to “antibody” immunity which promotes excess allergy and intolerances

THE BRAIN

Oxidative stress affects certain biochemical reactions that result in an imbalance in neurotransmitters (brain chemicals)

Oxidative stress

It does this via 3 mechanisms

- Direct toxicity- chemicals toxic to the brain
eg foods, heavy metals
- Nutrient deficiency
- Link of gut and nervous system

Make sense ?????

Oxidative stress

- Infections
- Toxin exposure
- Nutrient deficiency

Inflammation

- Gut
- Immune system
- Brain



Treatment

REDUCE OXIDATIVE STRESS!!!

- Heal the gut
- Replace nutrients
- Treat infections
- Clear toxins

Heal the gut

1. Diet

- Many forms based around “primitive” diet
- No processed foods
- Avoid gluten and casein (dairy)
- No preservatives
- Avoid plastic and aluminum packaging

Heal the gut

2. Repair

- Digestive enzymes
- Probiotics
- Prebiotics (precursors for good bacteria)
- Treat infections eg yeast

Heal the gut

3. Replenish

Specific supplements for gut wall healing

Replace Nutrients

Usually *compounded* to achieve big doses

- Vitamins- eg B12, folate, A,C,E
- Minerals-Zinc, magnesium, calcium
- Amino acids- glutathione, glutamine
- Fatty acids- omega 3, omega 6

Detoxification

Various ways to analyse heavy metal load and remove it from the system

Pfeiffer Treatment Centre

- Specific protocols based around nutrient replacement for people with schizophrenia, depression, anxiety and ASD
- www.hriptc.org
- 20,000 patients with 80% response rate

Metabolic disorders

- Undermethylator
- Pyrole disorder
- Metallothionien dysfunction
- Overmethylator

Metabolic disorders

- Specific symptoms
- Specific nutrient replacement
- Eg pyrole disorder

Thank you!

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