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SUPPORTING SOCIAL SKILLS

How Internal Fear May Affect Behavior

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A DOCTOR'S DISCUSSION OF HOW FEAR WITHIN THE BRAIN CAN HAVE A VISIBLE IMPACT ON A CHILD'S BEHAVIOR.

Children on the spectrum often display no fear of what we may consider dangerous circumstances, such as crossing a street, but show intense fear to noises such as a vacuum cleaner, a blender or a fan. The result of such "sensory overload" can extend to smell and taste, resulting in behaviors such as food avoidance, closing the ears or eyes, or unusual movements and vocalizations.

History of allergies, fear and the brain

In other words, children do not "misbehave" requiring behavioral modification to "return" to a "normal" behavior, but reflect a state in the fear center of the brain, the amygdala, that has been "reset", forcing the body to be in a constant "fight or flight" status.

Increased evidence indicates that this dysregulation of the "fear center" is largely due to localized inflammation that results in "short circuiting" the system. This inflammatory response in the brain derives largely from the presence of "allergic-like" reactions to environmental, pathogenic and stress triggers.

In other words, the first action for parents and health providers is to identify any allergies, food intolerance or autoimmune conditions and address them appropriately. For instance, large epidemiological studies have shown that the only statistically significant comorbidity (concurrent medical condition) was asthma, atopic dermatitis (eczema) and food intolerance.

Role of mast cells

All these conditions involve activation of a unique tissue immune cell, called mast cell. These cells are found in all tissues, especially the skin and gut, but also in the brain, especially in the "fear center".

Mast cells look like soccer balls, each filled with almost 1000 ping pong balls (secretory granules), each containing the well-known histamine, but as many as 50 other biologically active molecules that can contribute to allergic inflammation. Moreover, in the brain, the mast cells surround the protective blood-brain barrier (BBB) and mast cell-derived molecules can disrupt the BBB and make it more permeable to circulating toxic molecules, thus leading to even more inflammation in the amygdala.

It is, therefore, obvious that a reasonable approach to limit this cyclic, perpetuating reaction is to inhibit the overactivation of the mast cells and return them to their "normal" function of serving as "watch towers", alerting the body to the presence of a real or perceived danger.

Environmental and other exposures

In other words, mast cells normally function as "general contractors" (working behind the scenes) to orchestrate a normal immunologic response of the body. However, if the contractor starts the day with ten cups of coffee, a lot can go wrong! experience this as hyperactivity, which is not part of the official diagnoses. It is imperative that one first tries to protect the child from noxious exposures by using air purifiers, dehumidifiers, and exposure to noxious elements.

Avoid/minimize exposure to:
Allergens
Colorings
Deodorants/Perfumes
Electromagnetic waves
Flame retardants
Galactoligosaccharide (GOS)
Glyphosate
Mold, mycotoxins
Plastics
Polyethelene glycol (PEG)
Preservatives
Silicum
Talc

Twin 80

Histamine intolerance

If hyperactivity persists, it should first be addressed with natural molecules such as Valerian extract, Passiflora, or Ashwagandha, but their taste may make it difficult to administer even in drops. Certain sedating antihistamines may be worth trying as long as they are in clear capsules or compounded to avoid any coloring or additives.

Hyperactivity may also be due to histamine intolerance, and one should avoid histamine rich foods. In such cases, one can give a supplement containing the main enzyme that breaks down histamine, diamine oxidase.

Exclude histamine rich foods:
Avocado
Cheese
Nectarines
Sardines
Spinach
Spices
Tomatoes (ripe),
Tuna

Genetic regulation

Many children can also be hyperactive because they are “phenol intolerant” that means they are sensitive to phenol-containing foods such as berries, chocolate, grapes, polyphenolic oils, as well as supplements containing curcumin and pycnogenol.

To determine certain deficiencies (e.g. folic acid or folate) or sensitivities to natural molecules and drugs, one needs to ask for gene analysis (polymorphisms) of the key enzymes involved in the synthesis of active folate (MTHFR) or the breakdown of histamine and other molecules or drugs. Typically, individuals are categorized as “slow” or “fast” metabolizers, thus dictating reasonable selection and dosing of natural molecules or drugs.

Investigate gene polymorphisms:
COMT-Important for catecholamine and phenol metabolism
CYP3A4-Important for the metabolism of most drugs
CYP2C19-Implicated in histamine metabolism
Diamine oxidase (histaminase)
MTHFR (C677T and A1298C mutations)-Methylene tetrahydrofolate reductase-important for producing active folic acid
PST (Phenol sulfur transferase)-Important for metabolism polyphenols

Benefits of the flavonoid luteolin

The most important approach is to control the reactivity of the mast cells. This can best be accomplished with the use of a combination of two natural flavonoids, quercetin and luteolin.

Their combination provides synergistic inhibitory/protective action, while it allows luteolin to enter the brain and reduce the inflammation in the “fear center.” These flavonoids are poorly absorbed from the intestine in powder form, but their absorption is significantly increased when formulated with olive pomace oil (liposomal), which also provides its own anti-inflammatory and protective actions. Depend-

ing on the phenol sensitivities of the individual, one can start with either PureLut® or NeuroProtek-Low Phenol® and should not exceed more than 500 mg/day in adults because larger amounts may inhibit the intestinal bioflora and cause dysbiosis.

Addition of probiotics especially containing Bifidus species could be useful because they also participate in histamine breakdown. In certain cases of poor digestion in foods, it may be necessary to add a supplement containing pancreatic enzymes (carbohydrase, fructase, lipase, pancrease, sucrase).

Liposomal luteolin-containing products
Children with phenol intolerance
PureLut®
NeuroProtek-Low Phenol®
Adults with cognitive issues such as Brain Fog
BrainGain®
NeuroProtek®
Adults also with allergic symptoms
FibroProtek®
Adults with bladder inflammation
CystoProtek®

Finally, the benefit of oral administration of liposomal luteolin-containing supplements can be increased considerably by the use of a more potent luteolin containing molecule, tetramethoxyflavone. A hypoallergenic skin lotion, GentleDerm®, is best applied to the forehead for direct absorption by the temporal vessels. This skin lotion can also be applied on any irritated skin areas.

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