

The Nutritional Management of Attention Deficit Disorder, Attention Deficit/ Hyperactivity Disorder, and Hyperactivity

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Hyperactivity Today

- ◊ 4-12% of schoolchildren diagnosed with ADHD
- ◊ more conservative diagnostic criteria for ADHD projected to lower this to 3%
- ◊ 20% of all children have some type of behavioral problem

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ADHD Starts When?

- ◊ Higher incidence of hyperactivity in infants who:
 - don't like to be held
 - have poor or irregular sleep
 - have colic
 - have feeding problems

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Rationale for Effective Treatment

- ◊ 25-60% of students with ADHD will drop out of school before high school graduation
- ◊ 25-60% will have contact with legal authorities
- ◊ Excessive alcohol use rates will be higher

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Rationale for Effective Treatment

- ◊ Self esteem is often lower
- ◊ Interpersonal relationships will likely be strained
- ◊ Aggressiveness behavior appears to be a strong predictor of long-term poor social outcome

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Effective Evaluation Criteria

- ◊ Evaluations must be conducted over 2-3 visits, by a qualified physician using the DSM 4 criteria
- ◊ In addition to behavioral observation, there should also be:
 1. Complete physical exam
 2. Complete neurological exam
 3. Learning capability exam

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Proposed Etiology of ADHD

- ◊ Psychological factors
- ◊ Behavioral factors
- ◊ Genetic factors
 - ◊ 1. 1/3 of fathers (with ADHD as a youth) produced a child with ADHD
 - ◊ 2. A majority of identical twins both have ADHD
- ◊ Gender predisposition

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Proposed Etiology of ADHD

- ◊ Cerebral neurotransmitter abnormalities: dopamine and serotonin
- ◊ Environmental pollutants such as lead
- ◊ Exposure to fluorescent lights
- ◊ Perinatal factors (maternal phenylketonuria)
- ◊ Smoking during pregnancy
- ◊ Parental behavior

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Proposed Etiology of ADHD

- ◊ Hypersensitivity
- ◊ Allergy

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Hypersensitivity or Allergy?

- ◊ Hypersensitivity
 - a non-allergenic reaction to the chemicals contained in food, possibly due to an inherited biochemical predisposition
 - can occur as a threshold response, or all-or-nothing response

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Hypersensitivity or Allergy?

- ◊ Allergy
 - an immediate IgE mediated response where antibodies are produced, or
 - a delayed, lymphocyte mediated response involving gastrointestinal symptoms

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BOTH!!

- ◊ Either hypersensitivity, or allergy, or a combination of both can occur

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Behavioral Toxicology

- ◊ Challenging to isolate the effect of a single substance
- ◊ Difficult to isolate a nutritional effect from the placebo effect
- ◊ Difficult to completely remove psychotropic agents from the diet

Examples: soft drinks, tea, coffee

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Diet Affect

- ◊ No substantial difference between the diets of hyperactive children and non-hyperactive children (ex.-sugar)
- ◊ Consistent sub-group of children who improve, and then exhibit symptoms when challenged with the offending foods

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No Single Cause and No Single Cure

- ◊ Psychotropic prescription medications only effective while being taken—they provide no cure
- ◊ Dietary intervention demonstrates improvement in certain individuals
- ◊ Dietary intervention appears to have a longer lasting effect

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Nutritional Recommendations

- ◊ 1-2 month trial of the Feingold diet
 - eliminate artificial colors (especially tartrazine)
 - eliminate artificial flavors
 - eliminate salicylates
 - ◊ ex.-almonds, apples, apricots



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Nutritional Recommendations

- monitor vitamin C consumption
 - ◊ since high levels can reduce renal clearance of the salicylates
- monitor adequate protein intake
- monitor total nutrient intake

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Nutritional Recommendations

- ◊ A high protein/ low carbohydrate diet
- ◊ Supplement with:
 - ◊ Niacin
 - ◊ Thiamine
 - ◊ B6
 - ◊ Choline
 - ◊ Magnesium
 - ◊ Calcium

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Questionable Benefit?

- ◊ Sugar reduction
- ◊ Copper
- ◊ Iron
- ◊ Magnesium
- ◊ Manganese
- ◊ Zinc

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Additional Therapies

- ◊ Increasing physical activity
- ◊ Tutoring
- ◊ Family counseling
 - Increasing parent tolerance

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What Can the Physician Do?

- ◊ Ensure the child has been accurately diagnosed
 - to rule out other diseases
 - to rule out the absence of any disease
- ◊ Perform a food allergy and sensitivity assessment
- ◊ Discuss dietary modification
- ◊ Recommend nutritional supplementation
- ◊ Recommend increased physical activity
- ◊ Refer for family counseling, remedial teaching, and psychiatric treatment

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