

A Challenging Diagnosis by Rob Apathy March 2003

ATTENTION DEFICIT HYPERACTIVITY DISORDER

Sometimes preferred view

DSMIV - Diagnostic Criteria

- Inattention (6 out of 9 criteria)
- Impulsivity
- Hyperactivity (6 out of 9 criteria)
- Early onset (before age 7)
- Pervasive symptoms
- Effect of Impairment clinically significant

Variations on a theme

- Space Cadet
- Into everything
- "Bust your face"
- "You name it I've got it"
- "Fooled you"

Pharmacological Treatment options

- Dexamphetamine (Dex)
- Ritalin (Rit)
- Dex + Clonidine
- Moclobemide
- Risperidone
- Risperidone+Dex/Rit
- SSRI+Dex/Rit
- Amitriptyline
- Moclobemide + Amitriptyline
- Clomiprimine / Amitriptyline
- Haloperidol
- Zoloft
- Anafranil/Luvox

POOR SUCCESS RATE

- Weak diagnostic criteria
- Lack of standardisation

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- **Reliance on medical solutions**
- **Lack of consensus**
- **Heterogeneous population**

FUNDAMENTAL ISSUES

Viewing attention deficit and hyperactivity as conditions rather than as symptoms

WALKER, S

The Hyperactivity Hoax

St Martins Press 1998

Hyperactivity may be associated with

- **Tumour**
- **Lead**
- **Mercury**
- **Pesticides**
- **Diabetes**
- **Heart Disease**
- **Worms**
- **Viral Infections**
- **Bacterial infections**
- **Malnutrition**
- **Head Injury**
- **Allergies**
- **Caffeine**
- **Hyperthyroidism**

Thorough differential diagnosis is cost prohibitive

NEW DIRECTIONS

Genetic and environmental factors influencing the normal development of physiological and psychological Self Regulation.

Sigmund Freud c 1914

"... All our provisional ideas in psychology will presumably some day be based on organic structure..."

Fundamentals of brain development

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- Growth of the brain occurs in critical periods and it is influenced by environmental factors
- The infant brain develops in stages and is hierarchically organised
- The genetic program is under the influence of the prenatal, perinatal and post natal environment
- Ultimate functions are determined by the ontogenic adaptation of structural elements

Major reference

SCHORE, Allan, N

Affect Regulation and the origin of the self The neurobiology of emotional development

Lawrence Erlbaum Associates 1994

Neuropsychological Toxicology

There is a consensus that there exists a syndrome characterised by subjective symptoms which is the result of permanent alteration of brain function due to neurotoxic exposure

BioPsychoSocial Model

Critical Stages of early human development

- Conception
- Cell development
- Physical birth
- Recruiting Period
- Psychological birth
- Social birth

Developmental Stages

- Differentiation
- Migration
- Synaptogenesis
- Consolidation
- Rationalisation/Cell death
- Blood Brain Barrier
- Myelination

Toxic Agents during development

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- Undernutrition
- Thyroid hormone
- Ionisation
- Hexachlorophene
- Triethyltin
- Lead
- Polyhalogenated biphenyls
- Mercury
- Neural immune interactions

Generalised Self Disregulation Syndrome

Neurobehavioural assessment

- *Detailed structured Interview*
- *School reports*
- *Interview/observation*
- *Psychometrics*
- *PASAT*
- *TOVA*
- *qEEG*

Neurobehavioural Assessment

- *WAIS/WISC*
- *Kaufman Assessment Battery for Children*
- *Kaufman Adult Intelligence Scale*
- *Kaufman Test of Educational Achievement*
- *Stroop Test*
- *Copeland Questionnaire*

Test of Variables of Attention

- *Omission*
- *Commission*
- *Response Time*
- *Response Time Variance*

Quantitative EEG

- *Location*
- *Frequency*
- *Amplitude*
- *Distribution*

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- Synchronicity
 - P300 response
- Tests of Reactivity

- Opening/closing eyes
- Hyperventilation
- Photic Stimulation
- Stroop Test
- Cognitive tests

Quantitative EEG (QEEG)

The little end
And the big End

"Complementary medicine"

- Phenylalanine
- Taurine
- Docosahexaenoic Acid
- Phosphatidylserine
- Magnesium
- Pycnogenol
- Centrophenoxine
- Diethylaminoethanol
- Dilantin
- Piracetam
- Pyritinol
- Valerian
- Bupropion
- Pemoline
- Choline
- Vitamin B1

Complementary Treatment Options

- Tissue Analysis
- Vitamins
- Minerals
- Amino Acids
- Nutrition
- Biofeedback

ALTERNATIVE VIEW OF ADHD

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- *Focus*
- *Attention*
- *Planning*
- *Timing*
- *Patience*
- *Verbal skills*
- *Directions*
- *Consequences*
- *Social skills*

Loci for lead absorption

- Cortical Gray Matter

- Corpus callosum

- Optic chiasm

- Schwann cells

- Sensory N Thalamus

- Anterior horn

Other Problems

- *Social Issues*
- *Side effects*
- *Unknown long term effects*
- *Cocktail effect*
- *Psychological Dependency*
- *Short term effects*