DISCLAIMER

The information contained within this document does not constitute medical advice or diagnosis and is intended for education and information purposes only. It was current at the time of publication and every effort is made to keep the document up to date.

The information contained herein includes both psychological and non psychological interventions. The delivery of psychological services requires a medical referral whilst non psychological services do not.

Each person is an individual and has a unique psychological profile, biochemistry, developmental and social history. As such, advice will not be given over the internet and recommendations and interventions within this website cannot be taken as a substitute for a thorough medical or allied health professional assessment or diagnosis.

Medication and ADHD / ADD

Article QUICK LINKS :

INTRODUCTION

ADHD has become one of the most commonly diagnosed psychiatric disorders of childhood. Ritalin, most commonly prescribed for its treatment, "is a powerful stimulant that has pharmacological and psychological effects that are almost indistinguishable from those of cocaine" (Richard De Grandpre, "Ritalin Nation", 1999). "Emergency room visits by children aged 10-14 involving Ritalin intoxication have now reached the same levels as those for cocaine. This indicates escalating abuse of this highly addictive drug……Ritalin has become so ingrained in society that some parents have been forced by courts to give the drugs to their children" (Peter Breggin, "Talking Back to Ritalin", 1998).

In his 1991 book Russell Barkley stated that there is "no risk of addiction" when the drug is "taken orally as prescribed". When faced with mounting evidence concerning Ritalin abuse and addiction, Barkley recently declared, "No, Ritalin is not addictive – when taken orally. For this drug to be potentially addictive, it has to be crushed and inhaled nasally, or injected, and that has to be done repeatedly". This is quite an extraordinary position for Barkley to adopt in light of current evidence which points to the reverse being true. In the words of Peter Breggin MD, "How can any highly addictive drug be addictive by one route of administration and not by another?"

In Australia in the past nine years there has been an alarming increase (1300 per cent) in prescription rates for stimulants and antidepressants in school-aged children to treat Attention Deficit Hyperactivity Disorder. South Australia has experienced an almost 2000 per cent increase in psychostimulant use between 1991 and 1995. It is estimated that at least 50,000 Australian children are now on these prescription drugs. The Australian Medical Association is concerned that insufficient research has been done into the effects of stimulants on brain development.

In the United States an astounding 2.5 million children were prescribed Ritalin in 1997 and of these some 80% were boys. First Lady Hillary Clinton is also concerned about the 150 per cent growth in psycho stimulant medication during the period 1991 and 1995. There are moves in the United States for a complete moratorium on the prescription of powerful psychiatric drugs including Ritalin and the antidepressant Prozac, to children under the age of six.

On February 9, 2006, the Drug Safety and Risk Management Advisory Committee of the Food and Drug Administration (FDA) in the USA, voted to recommend a "black box" warning describing the risks of stimulant drugs used to treat ADHD and proposed the development of a guide for patients to be provided at the time prescriptions are dispensed; these are to contain information written in ordinary language about the potential hazards of the medication (Nissen, SE, 6 April 2006, New England Journal of Medicine Vol 354 (14), p1445-1448).

Medications under review were mainly amphetamines (Adderall & other brands) and methylphenidate (Ritalin, Concerta and other brands. The cardiovascular effects of these agents viz. increased heart rate and blood pressure have been thoroughly described in the medical literature. Briefing documents prepared for the FDA committee meeting in February described cases of myocardial infarction (heart attack), stroke and sudden death in children and adults on ADHD stimulants. The committee agreed that the "long-term benefits and risks of stimulant treatment are not known definitively" (NEJM May 25th 2006 p 2296).

A small, but recent study, (24th February 2005) conducted by researchers (University of Texas MD Anderson Cancer Centre in Houston & the University of Texas Medical Branch at Galveston) reported the detection of chromosome abnormalities after just three months, in every one of a dozen children treated for ADHD with methylphenidate. Methylphenidate is the generic name for a group of drugs that include Ritalin, Concerta, Metadate CD and others. The chromosome changes are associated with a three-fold increase in the risk of cancer and other adverse health effects. Larger studies at several medical centres are needed to confirm these results and to answer questions not addressed by it. The most important question "Do levels of chromosome abnormalities go back to normal once patients stop taking methylphenidate?" has yet to be addressed (Cancer Letters- Article in Press by Randa A EL-Zein, Sherif Z. Abdel-Rhaman, Matthew J Hay, Mirtha S Lopez, Melissa L Bondy, Debra L Morris and Marvin S Legator.

Given these concerns, it is worthwhile to examine the possible side effects of these powerful psychotropic medications, their effects on brain function, medical disorders than can result in ADHD-like behaviours and other medications that can also cause ADHD-like symptoms.

The most common medications to treat Attention Deficit Hyperactivity Disorder fall into three classes: stimulants (Ritalin , Dextroamphetamine), antidepressants (Tofranil, Norpramin, Prozac), and antihypertensives (Catapress). Each individual responds in their own unique way to the medication depending upon the person’s physical make-up, severity of symptoms, and other conditions which often accompany ADHD.

SOME ADVERSE EFFECTS OF STIMULANTS

Source: Talking Back to Ritalin, Dr Peter Breggin, 1998 (pg 12)
*Depression & sadness added Modified from the Drug Enforcement Administration (1995b)

Organ system affected	**Ritalin** **(Methylphenidate)**	**Dexamphetamine** **(Amphetamines)**
Cardiovascular	Palpitations Tachycardia (abnormally increased heart rate) Increased blood pressure	Palpitations Tachycardia Increased blood pressure
Central Nervous System	Excessive CNS stimulation (can cause convulsions) Psychosis (toxic or organic) * Depression or sadness Dizziness (Vertigo) Headache Insomnia Irritability Attacks of Tourette's or other tic syndromes	Excessive CNS stimulation Psychosis * Depression or sadness Dizziness Headache Insomnia Irritability Attacks of Tourette's or other tic syndromes
Gastrointestinal	Anorexia (loss of appetite) Nausea Vomiting Stomach pain Dry mouth	Anorexia Nausea Vomiting Stomach pain Dry mouth
Endocrine / Metabolic	Weight loss Growth suppression	Weight loss Growth suppression
Other	Blurred vision Leukopenia (low white blood cell count) Hypersensitivity reaction Anaemia	Blurred vision Skin rash or hives

FUNCTIONS OF THE BRAIN IMPAIRED BY STIMULANTS

Sources: P Breggin,MD, "Talking Back to Ritalin", (1998) page 44

Area	Where Located	Effects of Dysfunction
Cerebral Cortex	Outer surface of the brain.	Impairs higher mental activities, including intelligence and sensory perception.
Frontal Lobes	Front of the brain.	Impairs initiative and autonomy, reason, empathy and social awareness, insight and judgement- the most human functions. Can cause emotional blunting and zombie-like behaviour.
Limbic System	Widespread, beneath the frontal lobes.	Affects regulation of emotions, and usually produces indifference and apathy or euphoria. Can cause zombie-like behaviour.
Basal Ganglia	Middle of the brain.	Causes abnormal movements and can cause emotional blunting and zombie-like behaviour.
Temporal lobes including Hippocampus	Lower sides and under surface of the brain.	Impairs memory and learning.
Parietal lobe	Towards the back surface of the brain.	Impairs integration and understanding of sensory perception, language and sense of smell.
Cerebellum	Lower posterior of brain.	Affects regulation of muscle tone, posture, gait and skilled coordination.
Hypothalamus	Small area of under surface of brain above pituitary gland.	Impairs temperature control, appetite and hormonal function, including pituitary gland.
Pituitary Gland	Base of the brain.	Can impair growth, thyroid, adrenal and sexual functions and the overall reaction to stress.

Area	Where Located	Effects of Dysfunction
Reticular Activating System (RAS)	Core of the brain.	Dysfunction within the RAS blunts energy, alertness, self-awareness and responsiveness.
Spinal Cord	Begins at the base of the brain and extends downwards through the vertebral column.	Affects nerves that spread throughout the body, especially impaired are reflexes and muscle tone.

MEDICAL DISORDERS THAT CAN CAUSE ADHD LIKE SYMPTOMS

There are many medical disorders that can mimic ADHD / ADD. Thus it is important to eliminate the following disorders before a diagnosis is made. These include:

- ***Prenatal factors:*** Poor maternal care, eclampsia (hypertensive disorder during pregnancy), maternal use of cigarettes, alcohol and prescription, recreational and illegal drugs.
- ***Birth and peri natal complications:*** Birth injury, hypoxia (blue baby), toxaemia, prolonged labour, low birth weight, post maturity / prematurity.
- ***Inborn errors of metabolism:*** Phenylketonuria (PKU)
- ***Stresses in infancy:*** Malnutrition, abandonment
- ***Trauma and anoxia (absence of oxygen):*** Any head injury, including mild closed head injury; shaking (when parents shake babies in anger); anoxia from any cause, such as drowning, smothering, choking and strangulation
- ***Toxic exposures:*** Lead, mercury, carbon monoxide poisoning, air pollutants
- ***Infection:*** meningitis, encephalitis, almost any fibrile illness (elevated temperature)
- ***Neurological disorders:*** seizures (especially absence seizures), Sydenham's chorea, mental retardation from any cause, drug-induced akathisia (inner tension and hyperactivity)
- ***Other specific diseases and disorders:*** Insulin-dependent diabetes, cerebral vascular accident, brain tumour, chemotherapy for cancer, chronic renal disease, Lupus with CNS inflammation, iron-deficiency (anaemia), hormonal disorders (most commonly thyroid), vitamin deficiencies
- ***Physical disabilities:*** visual impairment from any cause, hearing impairment from any cause including ear infections
- ***Fatigue and insomnia:*** any cause of chronic tiredness or lack of sleep, Chronic Fatigue Syndrome
- ***Hunger:*** Many children from affluent families do not eat properly and may be hungry in school. Sometimes these children suffer from eating disorders.
- ***Pain:*** any source of pain, including hidden infections (ears), stomach and intestinal cramps (constipation), headache.

MEDICATIONS THAT CAN CAUSE ADHD LIKE SYMPTOMS

Most psychiatric and neurological medications including:

Stimulants: Ritalin, Dextroamphetamine, Adderall, Cylert, Caffeine

See article by: T. Lorensen: "Extracts from Talking Back To Ritalin"
By Peter R Breggin, MD

Note :
A small, but recent study, (24th February 2005) conducted by researchers at the University of Texas MD Anderson Cancer Centre in Houston and the University of Texas Medical Branch at Galveston reported the detection of chromosome abnormalities after just three months, in every one of a dozen children treated for ADHD with methylphenidate. Methylphenidate is the generic name for a group of drugs that include Ritalin, Concerta, Metadate CD and others. The chromosome changes are associated with a three-fold increase in the risk of cancer and other adverse health effects. Larger studies at several medical centres are needed to confirm these results and to answer questions not addressed by it. The findings from this study then begs the question "Do levels of chromosome abnormalities go back to normal once patients stop taking methylphenidate?" (Cancer Letters- Article in Press by Randa A EL-Zein, Sherif Z. Abdel-Rhaman, Matthew J Hay, Mirtha S Lopez, Melissa L Bondy, Debra L Morris and Marvin S Legator.

- ***Antidepressants:*** including SSRI's such as Prozac, Paxil, Luvox, Zoloft
- ***Neuroleptics or antipsychotics:*** Melleril, Haldol, Largactil, Navane, Risperidone etc.
- ***Minor tranquilisers, sedatives or sleeping medications:*** Valium, Normison, Librium, Xanax, Ativan etc.
- ***Antiepileptic medication:*** Dilantin, Tegratol, Epalim, Depakote, Zarontin
- ***Barbiturates:*** Phenobarbitol, amobarbitol, or Amytal, Butisol, Nembutal, Seconal
- ***Mood stabilisers:*** Lithium, Catapress, Depakote, Tofranil, Verapamil

Asthma Medications

- ***Ephedrine and pseudophedrine***
- ***Theophylline***
- ***Antihistamines***

Over the counter cold, allergy and sinus medications

- Most contain antihistamines or mild stimulants that can cause ADD-like symptoms.

Over the counter sleeping medications

- Any drug that can make you sleepy can impair alertness and impair concentration.

Steroids

- Prednisone
- Anabolic steroids (used to build muscle mass)

Some antibiotics

- Antibiotics frequently cause fatigue. A number have been associated with mental abnormalities, including various penicillins and cephalosporins (Ceclor).

All drugs that are abused

- Amphetamine, methamphetamine, Ritalin, Cocaine
- Phencyclidine (PCP)
- d-Lysergic acid (LSD)
- Marijuana
- Alcohol
- **All sedatives, hypnotics, minor tranquilisers including:**
  Halcicon, Valium, Ativan, Xanax, Dalmane, Klonopin

There is no magic cure for ADD / ADHD. However, it can be managed. The cornerstones of management include: identifying the antecedents, triggers and mediators of the signs and symptoms; dietary and nutritional intervention (biomedical approach including exercise); remediation of literacy and numeracy skills; neurophysiological retraining (EEG biofeedback or neurotherapy); behaviour modification and organisational planning; stress management including meditation/prayer and above all a supportive family and social environment to nurture self esteem and empower these individuals to reach their fullest potential.

For more information or to make an appointment please contact us on (02) 9637 9998 during business hours.