



Attention Deficit Hyperactivity Disorder

A Model of Shared Care
The Guide for a Busy GP

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The following manual has been designed as a part of the Mid West Division of General Practice's Attention Deficit Hyperactivity Disorder Project. It is intended as an informative guide for interested GPs who are willing to begin taking a more active role in the diagnosis and shared care management of ADHD cases.

The manual will contain firstly a short description of the ADHD project and its achievements, along with information on the shared care of ADHD cases that I have put together as the ADHD Project Manager and as a GP with an active involvement in the area.

The manual will also contain a collection of interesting and highly relevant articles written by other professionals, which I have gathered along the way and found to be of maximum utility. I understand that there is a plethora of writing in the area and wading through to find useful information can be time consuming. Thus, one of the aims of this manual is to bring together very useful information, which covers all that a GP should need to become actively involved in the diagnosis and management of ADHD cases.

Please use the manual in conjunction with the desktop reference, which is a quick and easily accessible guide to the key issues contained in the manual. The Midwest Draft Protocol for Shared Care (Appendix 12) can also be used as a summary sheet.

The manual is intended for educational purposes, thus it may be reproduced in whole or part subject to an acknowledgement of the source and no commercial use or sale. Reproduction for purposes other than those indicated above will require written permission from the authors of individual articles included in the manual.

I hope and trust that the manual and desktop guide will be a useful addition to your practice.

Dr Kim Pedlow
ADHD Project Manager

A MODEL OF SHARED CARE: ATTENTION DEFICIT DISORDER IN THE MID WEST PROJECT (1996-1998)

By Dr Kim Pedlow

Attention Deficit/Hyperactivity Disorder (known variously as ADHD or ADD) is a neurobiological disorder or imbalance in the brain which may result in learning and/or behavioural problems in children. It is believed that approximately 60% of affected children will take some of their symptoms into adulthood with them.

BACKGROUND TO THE PROJECT

ADHD is believed to affect 3-5% of the school age population, as stated in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM IV, 4th ed). Thus, it can be estimated that approximately 450 Mid West children have this condition.

Prior to this project, management of the condition in Mid West children was less than satisfactory. The project was developed as a means of addressing the following areas of concern:

- many cases of ADHD were going unrecognised in the Mid West Region
- those cases on treatment were travelling to and from Perth for follow-up and prescriptions were frequently posted
- local doctors were not involved in this activity and sometimes had no knowledge that their patients were receiving treatment
- multimodal management between professionals was non-existent
- many cases were lost to treatment and follow-up

The Attention Deficit Disorder in the Mid West Project was guided by; the recommendations of the National Health and Medical Research Council's draft report (NHMRC, 1996), the Support Document on ADD included in the WA Education Department's 1998 Behaviour Management in School's Policy (Appendix 11) and the 1996 Report of the Technical Working Party on ADD to the WA Government (Appendix 10).

The EdWA policy support document on ADD and the trial NHMRC document became available well into the program of workshops and seminars.

SUPPORT FOR THE PROJECT

Underpinning our endeavors was the strong support of the Learning and Attentional Disorders Society (LADS) WA. Two members of the LADS 35-member advisory body, Dr Ken Whiting and Dr Trevor Parry, gave their stamp of approval to our proposed activities. The following achievements of this project would not have been possible without their support:

- validating the modern view of ADHD within the local professional community
- providing a universal co-prescriber arrangement between visiting specialists and local GPs
- establishing communication links between the school system, local doctors and other involved professionals
- reworking of the WA NHMRC and Government EdWA recommendations to suit the situation in regional and rural Australia.

PROJECT AIMS

The project was developed to provide GPs with education and information about ADHD in order to facilitate its diagnosis and management. It also aimed to create a communication network between paediatricians, GPs and health and educational professionals through workshops, coordinated care meetings and a formal shared care protocol.

Specific objectives were:

- To increase and formalise shared care and co-prescriber arrangements through the introduction of a protocol
- To increase the knowledge and understanding of medical and behavioural management of ADD amongst GPs
- To develop a communication network between all medical and educational professionals involved in the management of children with ADD

METHOD**Seminars for GPs and health and educational professionals**

Validation required the bringing to Geraldton of acknowledged experts.

Dr Christopher Green, the well-known Sydney paediatrician and author, gave some memorable seminars to professionals and the public. It received favourable media publicity and brought on board a new crop of professionals.

Dr Trevor Parry, Director Child Development Centre of the Princess Margaret Hospital for Children in Perth, also gave excellent presentations and provided a link with the EdWA ADHD Working Group of which he is a member.

Dr Ken Whiting (Specialist Developmental Paediatrician, Perth), Dr Melvyn Wall (Specialist Paediatrician, Perth) and Dr Arvid Linde (Perth Psychiatrist) also travelled to Geraldton and presented well-received seminars on ADHD in children, adolescents and adults.

Shared Care and Co-prescriber arrangements

Establishing co-prescribing protocols between local GPs and visiting paediatricians required the co-operation of the visiting paediatricians and the Stimulants Committee of the Health Dept of WA (Refer Appendix 13).

Establishing a case manager role for local GPs required the visible transference by visiting specialists of their "mantle of authority". Dr Ken Whiting, paediatrician, lead this move to co-prescribing and shared care, a move supported by Dr Trevor Parry. Without their assistance, the Mid West Draft Protocol (Appendix 13) would not have been successful. Both Dr Whiting and Dr Parry visit Geraldton 5-6 times per year.

Communication network between professionals

Coordinated Care Meetings were attended by GPs and a broad range of health and educational professionals. At these meetings, a local schools' policy on ADHD was developed. Schools are currently considering a fourth draft (Refer Appendix 12) of this policy.

Crucial to this success was the establishment of a school subcommittee of the ADHD project. Chaired by Mr Russell Twining, principal of the Mt Tarcoola Primary School, this group has established a network of ADHD liaison persons throughout the school system. Interested people either volunteered for this role or were nominated by their school principals.

PERSONAL PERSPECTIVE

I must confess that my fear of professional and personal isolation for taking on such a controversial topic almost aborted the project. Acceptance and then support from colleagues became apparent midway through our project year. Fear gave way to confidence and a "can do" mentality took over.

This elation was fuelled by many treatment successes in ADHD cases. Parents are extremely grateful for help in this difficult area.

CONCLUSION (TAKE AWAY MESSAGES)

Upskilling GPs and other professionals

The informational seminars arranged for GPs and other health and educational professionals were instrumental in raising the profile and awareness of ADHD in our professional and wider community. Guest speakers provided a necessary validation of this relatively new approach to behavioural and learning difficulties in children, teenagers and adults.

Local application of internationally accepted ADHD model

The information presented throughout the project was soundly based on the model of ADHD promoted by NHMRC, the WA Government Technical Working Party, EdWA draft policy, LADS WA professional advisory body, the American Psychiatric Association's DSM IV and CHADD (Children and Adults with Attention Deficit Disorders) in the USA. Where I believe we have made a significant contribution is our method of applying that model to our community in regional WA.

Professional Networking

The project provided opportunities for extensive networking among health and educational professionals, via the schools subcommittee, workshops, seminars, liaison with the local LADS branch and favourable media publicity. This networking has been spectacularly successful and appears to be expanding beyond the formalities of the project.

Promotion in other regions

There is scope for promotion of our model elsewhere amongst health and educational professionals. This process would involve a high level of networking between professionals, their organisations, a committed local GP and supportive specialists.

Input of parent support group

ADHD is unusual in that many of the improvements in medical and educational management have been driven by parent support groups and their professional advisory bodies.

In the USA, CHADD runs a large network of branches. Their annual conference is a mecca for professionals from all over the world. WA is very fortunate in having the LADS society filling a similar role to CHADD. LADS provides wonderful support to sufferers, families and professionals.

THE PROCESS – A GUIDE FOR THE BUSY GP

By Dr Kim Pedlow

Following is a short description of the process that I have been using to manage ADHD cases and have found to produce success.

Cases are referred from teachers, psychologists, counsellors, remedial teachers, school nurses, child health clinics, day care agencies, support groups (eg LADS), doctors and family members. In addition, self-referral often occurs with older cases. It is predicted that in the future, more referrals will come from Substance Abuse agencies, Juvenile Justice, Police and the Prison System.

A history is taken looking for symptoms as listed in the American Psychiatric Association's Diagnostic and Statistical Manual IV. Particular attention needs to be paid to the caveats and exclusions to the diagnosis.

The gathering of information needs to be as objective as possible and from a number of sources and settings. The problem must be causing significant underperformance or dysfunction and be chronic and pervasive. I find that the rating scales by Professor Barkley (Appendix 2) of the University of Massachusetts Medical Centre to be very useful. Ideally these are completed by the parents and the patient if they are mature enough (mid teens onward), along with a number of teachers or observers from different settings. Old school reports, particularly the comment sections, are useful.

There needs to be an examination to check for other neurological disorders, defective hearing or sight, and to obtain a baseline for height, weight, blood pressure and head circumference (see Appendix 6)

The next step is specialist referral for confirmation of suspected cases. If the GP is happy that the diagnostic criteria have been filled, a trial of Dexamphetamine or Ritalin may be offered for urgent cases. Australian regulations require the initial prescription for these medications to be made by a paediatrician or psychiatrist, but where access to specialists is limited, fast tracking of these cases works well. See the case study of Hayden (Appendix 4) for an example of how this process is working in Geraldton.

In order to fast track a trial of medication prior to a specialist appointment, details of the case must be sent to a specialist accepting of shared care. These details include; (1) a letter outlining reasons for the diagnosis, past history examination and medications, (2) rating scales (3) details of any associated Specific Learning Difficulties (SLD's) or comorbidity and (4) a summary of old school reports.

A recommendation for a trial of Dexamphetamine or Ritalin is made and if confirmed by the specialist, a prescription is posted to the patient and an application made to the Health Department of WA for GP co-prescribing arrangements. Unavailability of an early specialist appointment need not delay commencement of a trial of therapy. (See Appendix 13). Fast tracking of these cases works well. The Geraldton Shared Care Program has been well received by patients and professionals.

Once the diagnosis is confirmed a multimodal treatment program is commenced. The case should be reviewed by the GP two weeks after commencement of treatment. Follow up by the GP and specialist is then conducted in accordance with the Midwest Draft Protocol (Appendix 13).

I find it best to plan a review a few weeks into a school term. By that time student, parents and teacher will have had time to make an assessment of progress assess how things are going. A telephone reminder a day or two prior to the appointment is essential and considerably increases the likelihood of attendance.

Borderline cases are best seen by a specialist prior to the commencement of treatment. Cases which clearly do not fulfill the diagnostic criteria are counselled accordingly and offered a follow up in 6-12 months or referral for a second opinion by a specialist.

Early access to accurate information is important to increase patient and family knowledge of the disorder and its treatment. In particular, suspected cases require early access to information about:

- ◆ Dexamphetamine/Ritalin – Potential benefits and side-effects
- ◆ Monitoring requirements.

This information is best discussed during a counselling session between the GP, the patient, and their family (if age appropriate). They should also be given access to more detailed information in the form of articles and handouts, a selection of which may be chosen from the appendices of this manual.

Information may be accessed via LADS for either borrowing or purchase. A list of books and videos available at the Geraldton City Library can be accessed by asking at the library's front counter, given that the books are scattered across various sections.

GP's who become involved in the management of ADHD cases inherit some of the responsibilities previously shouldered by the specialist i.e. Communication with other professionals involved in the multimodal web of shared care (ie teachers, psychologists, counsellors, school nurses, speech pathologists, occupational therapists, physiotherapists). Efficient organisation is necessary to avoid duplication as unfortunately the fee structure of general practice is not currently friendly to this model of case management. I find it to be both efficient and well-accepted to use the referral/feedback letter to specialists as case notes and to send a copy of it to other stakeholders as a method of keeping all involved professionals informed. My policy is to use the parents as the intermediary at all times.

Ideally, principal, educational psychologist and teacher need to be supportive and contribute to the multimodal management of each case. We have found that a network of ADHD School Liaison People is an effective way of supporting families and networking/advocating within the school. When the school is not supportive there needs to be frank discussion of the situation with a view to deciding how much information to share with the school.

Appendix 1 - DSM IV Criteria for Attention Deficit Hyperactivity Disorder (ADHD)

Reproduced from the 4th ed. Of the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM IV).

A. Either (1) or (2):

(1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- (a) Often fails to give close attention to details or makes careless mistakes in school work, work, or other activities.
- (b) Often has difficulty sustaining attention in tasks or play activities.
- (c) Often does not seem to listen when spoken to directly.
- (d) Often does not follow through on instructions and fails to finish school work, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions).
- (e) Often has difficulty organising tasks and activities.
- (f) Often avoids, dislikes or is reluctant to engage in tasks that require sustained mental effort (such as school work or homework).
- (g) Often loses things necessary for tasks or activities (eg toys, school assignments, pencils, books, or tools);
- (h) Is often easily distracted by extraneous stimuli;
- (i) Is often forgetful in daily activities.

(2) Six (or more) of the following symptoms of hyperactivity/impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- (a) Often fidgets with hands or feet or squirms in seat.
- (b) Often leaves seat in classroom or in other situations in which remaining seated is expected.
- (c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness).
- (d) Often has difficulty playing or engaging in leisure activities quietly.
- (e) Is often "on the go" or often acts as if "driven by a motor".
- (f) Often talks excessively.

Impulsivity

- (g) Often blurts out answers before questions have been completed.
- (h) Often has difficulty awaiting turn.
- (i) Often interrupts or intrudes on others (eg butts into conversation or games).

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings (eg at school, or work and at home).

- D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.
- E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (eg Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

Code Based on Type

314.01 Attention-Deficit/Hyperactivity Disorder, Combined Type:
If both criteria A1 and A2 are met for the past six months.

341.0 Attention-Deficit/Hyperactivity Disorder, Predominantly Inattentive Type:
If criterion A1 is met but criterion A2 is not met for the past six months.

314.01 Attention-Deficit/Hyperactivity Disorder, Predominantly Hyperactive-Impulsive Type:
If criterion A2 is met but Criterion A1 is not met for the past six months.

Coding note: For individuals (especially adolescents and adults) who currently have symptoms that no longer meet full criteria, "in partial remission", should be specified.

Appendix 2 – Rating Scales

This appendix contains tools used to gather diagnostic information from teachers, parents and the sufferer (depending on age). The first item in the appendix is a standard covering letter which can be easily photocopied onto letter head paper and sent to schools along with the comments questionnaire and behavioural rating scale for schools which follow.

Also included are the rating scales to be given to parents and the sufferer. The three rating scales are used to quantify behaviour on both a hyperactive/impulsive and an inattentive dimension.

Scoring the Rating Scales

The method of scoring is identical for all three scales, with 9 being the overall total score. Odd numbered items correspond to the **inattentive** behavioural dimension and even numbered items correspond to the **hyperactive/impulsive** dimension. A score of 0 or 1 on the scale equates to a value of 0, and a score of 2 or 3 equates to a value of 1. A total of 6 out of 9 (or more) on either of the dimensions is taken to be a positive result.

ADHD RATING SCALE 1V - SCHOOL VERSION
(University of Massachusetts Medical Center)

Child's name _____ Age _____ Grade _____

Completed by _____

**Circle the number that best describes this student's behaviour over the past 6 months
(or since the beginning of the school year.)**

	Never or Rarely	Sometimes	Often	Very Often
1. Fails to give close attention to details or makes careless mistakes in school work.	0	1	2	3
2. Fidgets with hands or feet or squirms in seat.	0	1	2	3
3. Has difficulty sustaining attention in tasks or play activities.	0	1	2	3
4. Leaves seat in classroom or in other situations in which remaining seated is expected.	0	1	2	3
5. Does not seem to listen when spoken to directly.	0	1	2	3
6. Runs about or climbs excessively in situations in which it is inappropriate.	0	1	2	3
7. Does not follow through on instructions and fails to finish work.	0	1	2	3
8. Has difficulty playing or engaging in leisure activities quietly.	0	1	2	3
9. Has difficulty organising tasks and activities.	0	1	2	3
10. Is "on the go" or acts as if "driven by a motor."	0	1	2	3
11. Avoids tasks (e.g., school work, homework) that require mental effort.	0	1	2	3
12. Talks excessively.	0	1	2	3
13. Loses things necessary for tasks or activities.	0	1	2	3
14. Blurts out answers before questions have been completed.	0	1	2	3
15. Is easily distracted.	0	1	2	3
16. Has difficulty awaiting turn.	0	1	2	3
17. Is forgetful in daily activities.	0	1	2	3
18. Interrupts or intrudes on others.	0	1	2	3

ADHD RATING SCALE 1V - HOME VERSION
(University of Massachusetts Medical Center)

Child's name _____ Age _____ Grade _____

Completed by _____

**Circle the number that best describes your child's behaviour over the past 6 months
(or since the beginning of the school year.)**

	Never or Rarely	Sometimes	Often	Very Often
1. Fails to give close attention to details or makes careless mistakes in school work.	0	1	2	3
2. Fidgets with hands or feet or squirms in seat.	0	1	2	3
3. Has difficulty sustaining attention in tasks or play activities.	0	1	2	3
4. Leaves seat in classroom or in other situations in which remaining seated is expected.	0	1	2	3
5. Does not seem to listen when spoken to directly.	0	1	2	3
6. Runs about or climbs excessively in situations in which it is inappropriate.	0	1	2	3
7. Does not follow through on instructions and fails to finish work.	0	1	2	3
8. Has difficulty playing or engaging in leisure activities quietly.	0	1	2	3
9. Has difficulty organising tasks and activities.	0	1	2	3
10. Is "on the go" or acts as if "driven by a motor."	0	1	2	3
11. Avoids tasks (e.g., school work, homework) that require mental effort.	0	1	2	3
12. Talks excessively.	0	1	2	3
13. Loses things necessary for tasks or activities.	0	1	2	3
14. Blurts out answers before questions have been completed.	0	1	2	3
15. Is easily distracted.	0	1	2	3
16. Has difficulty awaiting turn.	0	1	2	3
17. Is forgetful in daily activities.	0	1	2	3
18. Interrupts or intrude on others.	0	1	2	3

ADHD RATING SCALE 1V - SELF REPORT VERSION
(University of Massachusetts Medical Centre)

Your name _____ Age _____ Date _____

Circle the number that best describes your behaviour over the past 6 months.

	Never or Rarely	Sometimes	Often	Very Often
1. Fail to give close attention to details or make careless mistakes in my work.	0	1	2	3
2. Fidget with hands or feet or squirm in my seat.	0	1	2	3
3. Difficulty sustaining my attention in tasks or fun activities.	0	1	2	3
4. Leave my seat in the classroom or in other situations in which seating is expected.	0	1	2	3
5. Don't listen when spoken to directly.	0	1	2	3
6. Feel restless.	0	1	2	3
7. Don't follow through on instructions.	0	1	2	3
8. Have difficulty engaging in leisure activities or doing fun things quietly.	0	1	2	3
9. Have difficulty organising tasks and activities.	0	1	2	3
10. Feel "on the go" or "driven by a motor".	0	1	2	3
11. Avoid, dislike, or reluctant to engage in work that requires sustained mental effort.	0	1	2	3
12. Talk excessively.	0	1	2	3
13. Lose things necessary for tasks or activities.	0	1	2	3
14. Blurt out answers before questions have been completed.	0	1	2	3
15. Easily distracted.	0	1	2	3
16. Have difficulty awaiting turn.	0	1	2	3
17. Forgetful in daily activities.	0	1	2	3
18. Interrupt or intrude on others.	0	1	2	3

3 June 1999

Geraldton LADS Branch

- **Suggested guidelines for Educational Psychology Assessments for students at risk:**
 - Suspension or threatened suspension
 - Remedial teaching for consideration of such
 - Repeating a year or consideration of such
 - Significant under performance
 - School refusal

- **Suggested Guidelines for content of Educational Psychology Assessment. It is considered vitally important to first ascertain these students potential compared with skill and achievement. This would entail:**
 - Assessment of Intelligence eg. WISC or SLOSSON
 - Testing of specific Learning Difficulties, particularly language based
 - Assessment for Attentional Problems

It is deemed desirable to assess each child' potential in the above manner prior to engaging on any therapy such as behavioural modification.

**DR EK PEDLOW
PRESIDENT**

Educational Psychometric Assessment Guidelines

Dear Principal

Re: _____

This child has been brought to see me for a consultation because of concern about learning and/or behavioural difficulties. Part of the assessment of this child's condition involves obtaining a description of the child's academic progress and/or behaviour in the classroom. In accordance with Education Department Guidelines (Ref EDS 03096) a copy of this letter has been given to the parents to give to you for action by yourself/delegate. If the school psychologist has been involved with this child and he/she is agreeable, relevant information from that source would be most helpful. A psychometric assessment is/is not necessary. Information prepared by the school should then be passed back by yourself to the parent for on-forwarding to the doctor.

If you require further information from me, please contact me on the above number.

Yours sincerely

DR _____

I _____ being the legal guardian of _____ hereby authorise and instruct the school to release all information on my child to Dr Kim Pedlow and to complete all questionnaires as requested.

Signature

Date

BEHAVIOUR RATING SCALE

[To be used by schools to provide information to doctors (via parents) for initial screening of children for ADD or ADHD]

This checklist is not a diagnostic instrument for determining ADD or ADHD. It is intended to be used to determine the level of concern of teachers about the acquisition of skills of particular students which may be associated with attention disorders.

This checklist should take about 10 minutes to complete and relate only to class or playground behaviour. It does not involve questions of a medical or health nature.

Please make relevant comments below and complete the scale overleaf.

Child's name _____ Age _____

Year _____ Completed by _____

General classroom behaviour

Oral language and reading

Written work

Playground behaviour

Any other comments

CONNOR'S TEACHER'S QUESTIONNAIRE

NAME OF STUDENT _____

YEAR _____

DATE OF EVALUATION _____

Please answer all questions. Beside each item indicate the degree of the problem by a check mark (✓).

		Not at all	Just a little	Pretty Much	Very Much
1	Restless in the squirmy sense				
2	Makes inappropriate noises when he shouldn't				
3	Demands must be met immediately				
4	Acts 'smart' (impudent or sassy)				
5	Temper outbursts and unpredictable behaviour				
6	Overly sensitive to criticism				
7	Distractibility or attention span a problem				
8	Disturbs other children				
9	Daydreams				
10	Pouts and sulks				
11	Mood changes quickly and drastically				
12	Quarrelsome				
13	Submissive attitude toward authority				
14	Restless, always 'up and on the go'				
15	Excitable, impulsive				
16	Excessive demands for teacher's				
17	Appears to be unaccepted by group				
18	Appears to be easily led by other children				
19	No sense of fair play				
20	Appears to lack leadership				
21	Fails to finish things that he/she starts				
22	Childish and immature				
23	Denies mistakes or blames others				
24	Does not go along well with other children				
25	Unco-operative with classmates				
26	Easily frustrated in efforts				
27	Unco-operative with teacher				
28	Difficulty in learning				
29	Headaches				
30	Mood changes quickly and drastically				
31	Doesn't like or doesn't follow rules or restrictions				
32	Fights constantly				
33	Doesn't get along well with brothers and sisters				
34	Easily frustrated in efforts				
35	Disturbs other children				
36	Basically an unhappy child				
37	Problems with eating (poor appetite, up between bites)				
38	Stomach aches				
39	Problems with sleep (can't fall asleep up too early, up in the night)				
40	Other aches and pains				
41	Vomiting or nausea				
42	Feels cheated in family circle				
43	Boasts and brags				
44	Lets self be pushed around				
45	Bowel problems (frequently loose, irregular habits, constipation)				

CONNOR'S PARENT'S QUESTIONNAIRE

NAME OF CHILD _____ **DATE** _____

Please answer all questions. Beside each item below indicate the degree of the problem by a check mark (✓)

		Not at all	Just a little	Pretty much	Very much
1	Picks at things (nails, fingers, hair, clothing)				
2	Sassy to grown-ups				
3	Problems with making or keeping friends				
4	Excitable, impulsive				
5	Wants to run things				
6	Sucks or chews (thumb, clothing, blanket)				
7	Cries easily or often				
8	Carries a chip on his/her shoulder				
9	Daydreams				
10	Difficulty in learning				
11	Restless in the 'squirmy' sense				
12	Fearful of new situations, new people or places, going to school				
13	Restless, always up and on the go				
14	Destructive				
15	Tells lies or stories that aren't true				
16	Shy				
17	Gets into more trouble than others same age				
18	Speaks differently from others same age (baby talk) stuttering, hard to understand				
19	Denies mistakes or blames others				
20	Quarrelsome				
21	Pouts and sulks				
22	Steals				
23	Disobedient or obeys but resentfully				
24	Worries more than others (about being alone, illness or death)				
25	Fails to finish things				
26	Feelings easily hurt				
27	Bullies others				
28	Unable to stop a repetitive activity				
29	Cruel				
30	Childish or immature (wants help he shouldn't need, clings, needs constant reassurance)				
31	Distractability or attention span a problem				
32	Headaches				
33	Mood changes quickly and drastically				
34	Doesn't like or doesn't follow rules or restrictions				
35	Fights constantly				
36	Doesn't get along well with brothers or sisters				
37	Easily frustrated in efforts				
38	Disturbs other children				
39	Basically an unhappy child				
40	Problems with eating (poor appetite, up between bites)				
41	Stomach aches				
42	Problems with sleep (can't fall asleep up too early, up in the night)				
43	Other aches and pains				
44	Vomiting or nausea				
45	Feels cheated in family circle				
46	Boasts and brags				
47	Lets self be pushed around				
48	Bowel problems (frequently loose, irregular habits, constipation)				

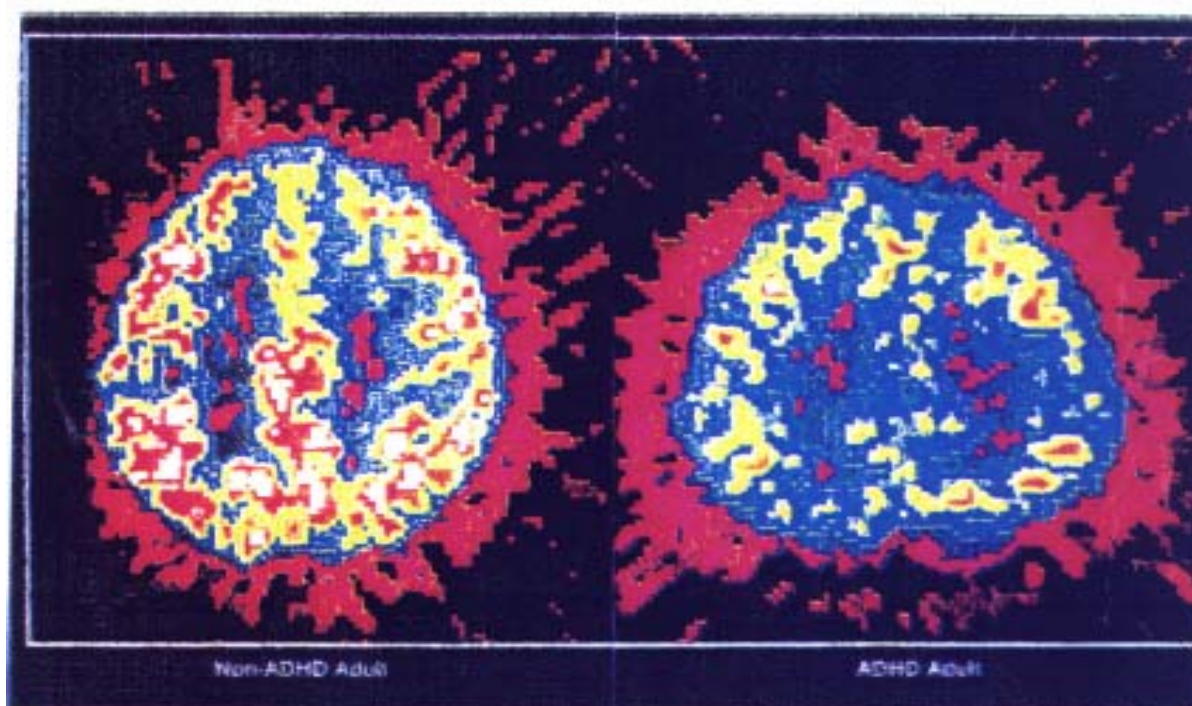
Appendix 3 - Positron Emission Tomography (PET) Scan Attention Deficit Hyperactivity Disorder

This scan of brain function shows marked differences in uptake of radioactive glucose between ADHD and non-ADHD cases.

The non-ADHD scan shows normal uptake in the fronto-thalamic areas (arrowed), whereas the ADHD scan shows markedly reduced uptake. This pattern correlates well with the diagnostic process as used in our project and recommended by the NHMRC.

Non-ADHD Adult

ADHD Adult



Appendix 4 - Case Studies

This appendix contains summary information of two ADHD cases which have been encountered in the Mid West Region.

The case study of “Hayden” was encountered prior to commencement of the Mid West Division’s ADHD project. It is a good example of how dysfunctional contacts with helping professionals can result in delayed diagnosis, a phenomenon which has frequently presented and acted as the major impetus for the Mid West Division’s ADHD project.

The case study of “Torey” is a post-project example, following the refinement of the diagnostic process, which allowed efficient assessment, diagnosis and treatment of the child. This case study is presented in the format of a referral letter to the paediatrician, containing summary information. As outlined in the section on the Process of Shared Care, this letter is used as case notes for the patient’s file, and as a means of communication to other professionals involved in the web of shared care.

CASE STUDY 1- “HAYDEN” – Diagnosed 1992 (Pre Project – Delayed Diagnosis)

- D. O. B. 17/10/89
- S.J.O.G. H. Geraldton
- Mother, ‘Linda’ aged 39 years
- Normal pregnancy
- Vacuum extraction
- Apparently normal child

1989

- Feeding problems, poor sleep patterns
- Stormy course as an infant and toddler
- Bilateral inguinal hernia

1990

- Happy to go to anyone
- Loved rough and tumble games
- Recurring Otitis Media requiring grommets
- Late walker, talker, backcrawler
- Overactive, persistent poor sleep patterns
- Discipline difficult
- Rx Chloral/Phenergan/Vallergan

1991

- Referred Geraldton paediatrician-
△Parenting problem
- Saw psychologist, child health sister
- Linda spends 1 week in hospital - stress related illness

1992

- Mt Magnet - talk by Dr Chris Green made Linda suspect Hyperactivity
- Saw visiting paediatrician
△Hyperactivity
- Spent time in NGALA and assessed.

Child Development Centre.

△Developmental delay/registered Irrabeena ADHD

- Noonan's Syndrome – Dysmorphic face, antimongoloid slant to eyes, transverse palmar creases, pectus excavatum, joint laxity, inguinal hernia, wide spread 1st and 2nd toes, mild ptosis.

June

3 years 8 months

- Commenced Stimulant Rx with good results - Dexamphetamine 2.5mg twice daily.
- Appetite decreased

October

- Clonidine 25mg twice daily for aggression and insomnia
- Speech therapy
- Behaviour programmes

1994

- Good result on Rx

1995

- Year 1
- School supportive
- Educational Psychologist monitors and prepares programmes
- School gives lunchtime medication

1996

- Year 2
- As for year 1
- Linda helps with remedial work and has completed teacher's aid course.

Husband had problems adjusting and they have separated. He had a history of hyperactivity, dyslexia, poor school achievement and multiple jobs. He has a tendency to self blame.

**CASE STUDY 2- "Torey" – Diagnosed 1998
(Post Project – Early Diagnosis)**

DR KIM PEDLOW

MBBS Dip. MID COG (SA) F.R.A.C.G.P

Telephone (099) 216099
Fax (099) 643410

Victoria District Medical Centre
151 Durlacher St
Geraldton WA 6530

7th July, 1998

Dr W
37 Green St.
PERTH WA 6005

**RE: TOREY
DOB 17/07/90**

Dear Dr W,

Torey is a classical case of combined ADHD. He's had a psychometric assessment by Miss X, which I shall enclose. This reveals normal IQ with maths being his strength but language base learning being a problem, as is his behaviour.

Mums and teachers rating scales come in 9,9,9 for inattention and 8,4,7 for hyperactivity/impulsivity. Perusal of his behavioural rating scales from the two teachers reveals that he is better one to one but he is very slow to commence work and finish, is better speaking rather than writing and has major problems with organisation and distractibility. Violence has been an ongoing problem at home with attempted strangling of a sibling and there has been fighting on the bus. He fractured his leg and missed three months in Pre-Primary possibly due to his impulsive behaviour. He is frequently picked on by his schoolmates and then retaliates in an obvious manner resulting in double penalties. There are some worrying signs of avoidance of especially written work and some oppositional behaviour at home and school involving him spitting the dummy, throwing his pencils around, slamming the desktop and kicking the chair.

Examination reveals no neurological abnormality, BP 80/50, height 123cm and weight 27 kilos.

He needs to be commencing forthwith on Dexamphetamine and I would be grateful if you would post a script direct to mum for 100 with no repeats and put me down for Co-prescriber. I thought one and a half with breakfast and one with afternoon tea would be a good starting dose. I shall review two weeks after therapy has commenced. Please put him on your urgent cancellation list.

Yours sincerely

Kind Regards

Dr KIM PEDLOW

CC Miss X - School Psychologist
Miss Y – Teacher
Mrs Z - Mother

Follow-Up Details

28/7/98

Mother and teacher reported a totally changed child and were very happy with symptom control. Sleep patterns were still a problem. Mother was given the option of omitting the afternoon dose of Dexamphetamine or introducing Clonidine at night.

11/9/98

Teacher appeared happy with academic progress. Still a few problems persisted with behaviour in the playground, namely mood swings and violent outbursts. Questioning revealed some symptoms of depression. Commenced on Clonidine 50ug twice daily (7am, 3.30pm).

23/9/98

Mother and teacher were happy with progress, estimating a 90% improvement since commencement of treatment.

KIM PEDLOW

MBBS Dip.MID COG(SA) F.R.A.C.G.

ACN 099 191 226

ABN 93 009 191 226

13 February 2001

CARE PLAN

Solley X

DOB 1987

DIAGNOSIS: ADHD predominantly inattentive form. Language based learning disability.

TREATMENT: Ritalin 2 mane. 1 lunch

HISTORY: Solley has a long history of academic and social difficulties. An educational psychology assessment last year revealed that Solley was of average IQ but there were problems with inattention and language based learning and expression. He had received remedial teaching in Year 5.

Assessment by Dr Ken Whiting, developmental paediatrician, resulted in diagnosis of predominantly inattentive ADHD. A trial of dexamphetamine was commenced with initial improvement but significant appetite suppression. There was some willingness to take the medication and weekends were regularly omitted.

When last reviewed 01/02/2001 Solley was attending Year 8 at the local high school. He was reluctant to take his medication and there was doubt as to the effectiveness. Dosing was erratic.

Trials of one week on, one week off medication were suggested under close supervision and observation of effects and side effects at home and school.

PAST MEDICAL HISTORY: Bed-wetting

FAMILY HISTORY: Language based learning difficulty

MANAGEMENT: Solley needs to have a closely supervised trial on and off his medication with review after a month. If beneficial effect is confirmed then he needs to continue until he has at least finished his secondary schooling. Review will be myself 3-6 monthly and Dr Whiting at least yearly.

FUTURE MANAGEMENT: Detailed information as to be the best management of ADHD in the classroom may be found in the manual *Talk Time Team Work* by the New South Wales education department. The education department of Western Australia also has useful guidelines for the management of ADHD in the classroom. There are some excellent resources on language based difficulties and ADHD in the Geraldton City Library, these include books, videos and audiocassettes, donated by the local LADS branch. In addition, checkout the *CHADD* website, www.chadd.org/ and links from that site to the national institute of mental health in the USA. The address is www.nimh.nih.gov/publicat/adhd.cfm Here you will find the latest position papers from the US government on ADHD. These are results of a collaboration between the US federal departments of health and education. Scroll down for a several page summation.

His school's educational psychologist is ideally sited to manage Solley's tailored education programme.

I strongly recommend to all ADHD families that they join the LADDS group. This is an excellent organisation for support and leadership in this area. Enclosed is an application form.

MONITORING: Assessing the medication for effect, duration and of action and side effects at home and school is useful when it comes to deciding on Solley's dosage regime. Ritalin usually lasts for 2-4 hours but has wide variation. It is particularly important in Solley's situation of trials on and off treatment that this be closely monitored. The inattentive form of ADHD is more difficult to assess and monitor treatment than the hyperactive/impulsive form. Professionals and parents with a more detailed knowledge of ADHD and learning disabilities and their various effects are particularly useful in this exercise.

Dr EK Pedlow
cc Dr Whiting
Mum 3 copies
Educational Psychologist
File

Follow up details

26/7/98

Mother and teacher reported a totally changed child and were very happy with the symptom control. Sleep patterns were still a problem. Mother was given the option of omitting the afternoon dose of Dexamphetamine or introducing the Clonidine at night.

11/9/98

Teacher appeared happy with the academic progress. Still a few problems persisted with behaviour in the playground namely mood swings and violent outbursts. Questioning revealed some symptoms of depression. Commenced on Clonidine 50ug twice daily (7am, 3.30pm)

23/9/98

Mother and teacher were happy with progress, estimating a 90% improvement since commencement of treatment.

Appendix 5 – Writing Samples

Following are two samples of writing produced by a child by the name of Matthew. Sample 1 was produced prior to treatment, sample 2 was produced just nine days after the child was diagnosed with ADD and treatment (Ritalin) was commenced.

Sample 1: Before treatment.

Matthew
War
14/97
Stoughton CA

readying Books, magic hats, words
and helps, a magic things
Blue robin flew down to the
rabbit & Red Robin flew
to the Bear. (Red & Blue
robin) Red robin said
to the Bear "Why want
you snake and cottage?
Blue robinny said, "Why
don't you snake the
cottage together?"
They stopped the war, &
they said "Ok, we will do
ok!" Great! The Bear &
red robin to gether in the cottage

Where
the
magic
comes in?

The

Sample 2: Nine days after treatment.

Matthew

Cabin 9

10th April/90

A night at Bunbury
Speedway.

One nice after noon I
was at Bunbury Speedway
Ron Krikey how driver no 99
was opened for 2 week.
For arguing with Con
Migrow.

"Dad" was going well very
well indeed they were time
trielles Dad go 17.45 sec.
the car was handling good.
I did dad's helmet.

we After the Speedway had
fined we went to the
bareque talking & laughing
were - Rod Rocket Brown
team and pairs team & dad's
crowe were left from the
Speedway

PI

Appendix 6 - Attention Deficit / Hyperactivity Disorder Meeting The Challenge

By Dr K.R. Whiting

Reproduced by Courtesy of the Author Dr K.R. Whiting.

Current interest in Attention Deficit/Hyperactivity Disorder (ADHD) is soaring. Magazine articles, newspaper reports, television programs and radio talk shows have found this to be a timely topic.

Scientific journals report many studies of ADHD children and youth and ADHD support groups continue to grow at an astounding rate as parents seek to learn more about this disorder in an effort to help their youngsters succeed at home, school and in society. ADHD is characterised by symptoms of inattention, and/or hyperactivity/impulsivity, which have an onset in childhood, which persist for at least six months, and are present to a degree that is maladaptive and inconsistent with the developmental level of the person concerned. It presents with behavioural and educational problems. Approximately 5% of the school age population have ADHD with boys outnumbering girls in a ratio of 3 to 1.

ADHD has been described in various forms for a long time, starting with a description by the German Physician, Hoffinan in 1845 through many colourful labels - "Morbid Defects in Moral Control" (Still, 1902), "Minimal Brain Damage" (Strauss and Lehtinen, 1947), "Minimal Brain Dysfunction" (Clements, 1962), "Hyperactive Child Syndrome" to Attention Deficit Disorders- the last title reflecting the basic attentional nature of the problem.

ADHD is not just limited to Western Societies, a recent editorial in the Lancet (13 July 1996), comments on the cross cultural phenomenon with a report from Hong Kong (Anderson, JC 1996) and reports are starting to emerge from Japan.

Diagnostic Issues

The diagnosis of Attention Deficit/Hyperactivity Disorder is a clinical diagnosis based on the criteria described in the Diagnostic and Statistical Manual of Mental Disorders, 4th edition. Currently three types of Attention Deficit/Hyperactivity Disorder are recognised:

- 1. Attention Deficit/Hyperactivity Disorder, combined type.**
- 2. Attention Deficit/Hyperactivity Disorder, predominately inattentive type.**
- 3. Attention Deficit/Hyperactivity Disorder predominately hyperactive/impulsive type.**

The diagnostic criteria are listed in Appendix 1.

Causes Of ADHD

ADHD is clearly a familial condition (Goodman 1989, Cadoret 1991, Faraone 1991, Levy 1994). The fronto-striatal axis has enjoyed the most attention. The frontal lobes are shown to be altered in various studies:

- a) **Unusual electrical activity - Neurometrics (Mann 1991).**
- b) **Diminished blood flow - Single Photon Emission Computerised Tomography (Lou 1990).**
- c) **Diminished oxygen and glucose metabolism - Positron Emission Tomography (Zametkin 1990).**
- d) **Smaller frontal lobes – abnormalities in the Corpus Callosum – Magnetic Resonance Imaging (Castellanos, 1996) (Hynd, 1991)**

Psychological tests of frontal lobe function are abnormal - if a continuous performance test (CPT: i.e. Gordon or Connors) is combined with the F-A-S sub-test of the Controlled Oral Word Association test the positive predictive power is 90% but the negative predictive power is 60% (Barkley, 1994).

The use of stimulant medication will correct abnormalities found in the above tests in most cases (Except anatomical abnormality).

Magnetic Resonance Imaging shows part of the anterior frontal lobe and the basal ganglia are smaller, particularly on the right hand side of children with attention deficit/hyperactivity disorder. Usually the right side is slightly larger than the left.

Results from these laboratory investigations are not diagnostic of ADHD. The studies are small and complexity in application and interpretation do not allow their use as routine clinical tools in general.

Identification of ADHD

The majority of children with ADHD come to professional attention in their first few years at school - the majority presenting in year four. Identification and diagnosis of children with ADHD requires a combination of clinical judgement and objective assessment. Since there is a high rate of co-existence of ADHD with other psychiatric disorders of childhood and adolescence any comprehensive assessment should include evaluation of the individual's medical, psychological, educational and behavioural functioning. The more domains assessed the greater certainty there can be of a comprehensive, valid and reliable diagnosis. Taking of a detailed history, including medical, family, psychological, developmental, social and educational factors is essential in order to establish a pattern of chronicity and pervasiveness of symptoms. The history can be augmented by school reports, parents and teacher behaviour rating scales, information from sport coaches and after school care personnel etc. Psycho-educational assessment investigating intellectual functioning and cognitive processes including reasoning skills, use of language, perception, attention memory and visual motor functioning as well as academic achievement is often performed. Visual and hearing assessments will need to be performed as required.

A visit to the Paediatrician is essential to rule out other medical conditions that can mimic ADHD, such as partial hearing, epilepsy, hyperthyroidism and biochemical disorders. (Sanfilippo's Syndrome, Adrenoleukodystrophy etc.), chromosomal disorders e.g. Fragile X Syndrome, Mental Retardation, Autistic Spectrum Disorders (Asperger's) and Psychoses. Consideration should be given by the Paediatrician to other psycho-social situations which may cause attention deficit-like behaviour, such as domestic violence and sexual abuse.

The concept of a "dysfunctional family" should be approached with care and has been over diagnosed in the past, - as ADHD is an inherited disorder it is highly likely that one or more adults in the family will also have attention deficit/hyperactivity disorder.

Observations of the child's behaviour in the office are not a reliable guide to the child's behaviour in other settings. Motor overactivity is not a pre-requisite for the diagnosis of ADHD.

Comorbidity Of ADHD

Generally children with ADHD are of normal intelligence. They often obtain lower scores on standard aptitude and achievement tests because of their inattentive impulsive responding style.

As ADHD is a common condition there is also no reason why it may not also occur with intellectual difficulties or other syndromes. It is important in the clinical assessment to identify the presence of any co-existing disorders as these need to be treated in their own right in addition to the ADHD. 50-70% of ADHD is accompanied by a comorbidity. The following are the most commonly related comorbidities:

- 1 Specific Learning Difficulties (SLD) (30%). Remedial teaching is essential but is almost impossible in the presence of a co-existing untreated ADHD.
- 2 Conduct Disorder (13%) – This group has the poorest outcome. The combination of ADHD and Conduct Disorder leads to a higher incidence of crime and substance abuse than would be expected with Conduct Disorder alone. Again management of the Conduct Disorder in the presence of an untreated ADHD is virtually impossible.
- 3 Motor Planning and Coordination Difficulties - Best managed by occupational therapy although in many cases the addition of stimulant medication improves coordination as well.
- 4 Depression - In the past many ADHD patients have been misdiagnosed as having depression alone. Both the depression and ADHD need to be adequately treated to ensure success.
- 5 Anxiety - Swedish studies (Gillberg, 1994) have shown that this is the group with a higher suicide rate. Again psychological management is difficult without treating the underlying ADHD.

The prognosis of the ADHD child is determined more by the comorbidity than the “pure” ADHD alone. ADHD children have a higher incidence of minor physical anomalies, enuresis, injuries, sleep problems and other emotional problems such as social isolation, peer rejection and family conflict.

There appears to be an as yet undefined relationship between ADHD, obsessive compulsive disorder and Tourette's syndrome. 60% of children with Tourette's syndrome have ADHD like behaviour and may show this behaviour as the sole presenting complaint up to 2 years before any other feature of Tourette's syndrome appear.

Treatment of ADHD

Most experts agree that a multi-modal approach to treatment of the disorder aimed at assisting the child medically, psychologically, educationally and behaviourally is often needed. This requires the coordinated efforts of a team of health care professionals, educators and parents who work together to identify treatment goals and evaluate the results of their efforts. Various bodies throughout the world have prepared management protocols (NHMRC Australia, EUNYTHIDYS-EEC).

The decision to intervene and its direction is influenced by the severity of the primary symptoms, the age of the child, extent of secondary problems that have developed and comorbidity.

MEDICATION

Stimulant medication is the single most effective tool in the management of ADHD. The most commonly used psycho-stimulants are methylphenidate (Ritalin) and Dexamphetamine. Cylert (Pemoline) is also used in the United States of America. Other medications such as clonidine, tricyclic antidepressants and SSRI's are useful in certain cases and in comorbidities. The results of numerous double blind trials show that 80-90% of ADHD children will respond to stimulant

medication. These medications can have a dramatically positive effect on attention, overactivity, visual motor skills and even aggression. Careful prescription rarely results in troublesome side effects and medication is not addictive in the correct dose and in the correctly diagnosed child. Medication enhances the child's natural ability to attend, focus and persist and when effective, parents note that their children are calmer less restless, less impulsive, less insatiable and more reflective.

Changes in behaviour are observed within 20-60 minutes after oral ingestion with a peak action at 90-180 minutes. Therapeutic effects usually last 4-8 hours (Ritalin shorter than Dexamphetamine). Features of headache, abdominal discomfort and tearfulness may occur during the first five days of treatment but soon subside. Ongoing difficulties may be encountered with insomnia and appetite suppression but these usually can be dealt with by adjusting the dose and timing of medications. Weight loss equally can be minimised by increasing calories in the diet and adjusting the timing of medication. There is an ongoing debate about possible growth suppression with stimulant medication and no final conclusion has been reached but the weight of evidence would support the fact that these children reach their full growth potential. A recent study has suggested that ADHD children may grow slowly even without medication (Spencer, TJ 1996). Tics may be made worse or improved with the use of stimulant medication. If the tic becomes socially disabling, reduction in the dose or the addition of Clonidine may be helpful. Much concern is expressed in the popular press about the recreational and addictive effects of psycho-stimulant medication. Despite this, stimulant medications have low potential for causing physical addiction. While there is some evidence to suggest that children with ADHD are more likely to become substance abusers compared to their peers, (Horner, 1997) there is little evidence to suggest that they use psycho-stimulants recreationally. Work from Wayne State University has shown that stimulant medication may well be of use in the management of substance abuse (Schubiner, H., 1995).

Treatment with stimulant medication is usually started on the weekend and because of the short half life, medication is usually taken at breakfast, lunchtime and after-school for difficulties with afternoon behaviour and homework. Weekend and school holiday breaks have been recommended in the past but are not essential and it makes sense that the medication should be given seven days a week. Most protocols advise that the medication should be ceased for a short trial period every 12 months to determine if it is still producing significant therapeutic benefits. Dosage of stimulant medication is not weight dependent (Rapport, 1997).

Clonidine (Hunt, 1990) is useful in children who show excessive degrees of aggression, motoric activity, tics and sleep difficulties. This is given in addition to a stable dose of psycho-stimulant medication (1-4mcg/kg/day).

Tricyclic antidepressants: these may be valuable for children with co-morbid symptoms of anxiety or depression. Their use, however, is difficult; baseline cardiac exam and ECG is recommended prior to using tricyclics in doses excess of 2mg/kg/day.

Selective Serotonin Reuptake Inhibitors are also of value in children exhibiting depression, anxiety or obsessive compulsive disorders in addition to the ADHD.

Major tranquilisers, especially Risperidone (0.5-2mg/day) have recently been shown to be of value in controlling aggressive and explosive behaviour in those children who have not responded to stimulants, but may cause problems with sedation and extra pyramidal reactions.

EDUCATIONAL MANAGEMENT

Correct educational management can have an enormous impact on the ADHD child. There is a large amount of literature available to educationalists as well as in service programmes (eg Educators In Service Programme on Attention Deficit Disorders – CHADD, Talk Time Teamwork-

New South Wales Department of School Education, Australia). The management of the ADHD child is specific and different from that for other children with learning disabilities. These children respond best to a highly organised and routine classroom structure. They perform best if seated at the side of the room, one row back, preferably at a single table separated from nearby students. These children frequently need to cue from the other students and frequent adult input throughout the day is necessary. Associated learning difficulties need to be remediated.

BEHAVIOUR MANAGEMENT

ADHD children's behaviour is often unresponsive to traditional disciplinary techniques. Cognitive behaviour management has not been shown to be effective in ADHD (Abikoff, 1991) unless the child is on stimulant medication. These children have short term memory difficulties and it is important that the consequences (positive or negative) follow very closely on the targeted behaviour in the temporal sense, ie it is absolutely useless to threaten an ADHD child who is misbehaving at the beginning of the term with exclusion from the end of term excursion. Psychologists need to be trained in the understanding of ADHD children in order to apply effective behaviour management techniques. Parents can benefit from books (Wallace, 1996). Family therapy is helpful in ameliorating some of the secondary consequences of the condition by allowing insight into the causes of family conflict and opening communications.

DIETARY THERAPY

ADHD is not caused by diet. Children who react to food either have a food sensitivity or food allergy. As these conditions are relatively common they may co-exist with ADHD and as such may need to be addressed. There is no objective evidence to support dietary sugar being a trigger of hyperactive/ inattentive behaviour despite this being an anecdotal impression reported by many parents.

Outcome of ADHD

ADHD is an extremely stable condition with approximately 80% of young children diagnosed with ADHD also meeting criteria for an ADHD diagnosis when re-evaluated in adolescence (Barkley, 1991). 30-40% of ADHD students have a far greater likelihood of repeating years, school drop-out, academic, social and emotional adjustment difficulties (Harris, 1995; Mannuzza, 1993). It is becoming apparent that it is unlikely that people "grow out of" ADHD (Harris, 1995). In adults it is frequently linked with psychiatric illness, concentration difficulties, job failure, marital discord and divorce and substance abuse. Many ADHD children however, will learn to cope with the ADHD in mid to late adolescence and so will not need ongoing stimulant medication. There is however, insufficient information at present for any exact figures to be given.

The risk for poor outcome of ADHD children and adolescents can be reduced through early identification and treatment. By recognising the disorder early and taking the appropriate steps to assist the ADHD child and family, many of the negatives commonly experienced by the child can be avoided or minimised so as to protect self esteem and avoid a chronic pattern of frustration, discouragement and academic failure. The results of numerous double blind trials show that between 60-90% of ADHD children will respond to stimulant medication. These medications can have a dramatically positive effect on attention, overactivity, visual motor skills and even aggression. Careful prescription rarely results in troublesome side effects, medication is not addictive in the correctly diagnosed child. No long term side effects have been identified in the 60 years that Dexamphetamine has been used. The other medications mentioned above are used for specific reasons such as, aggression, sleep disturbance, insatiability and the treatment of comorbidity. The use of stimulant medication in patients with Tourette's syndrome and obsessive compulsive disorders is controversial but there is little evidence to support the notion that stimulant medication causes Tourette's syndrome. There is a reasonable body of opinion that stimulant medication can be used judiciously in Tourette's syndrome and Obsessive Compulsive

Disorders if the ADHD features warrant such intervention in conjunction with the other medications for those disorders.

While the hard facts about attentional deficits give us good reason to be concerned about ADHD children, the voice of advocating parents coupled with the commitment of educated health care professionals and educators provide hope for the future wellbeing of this population of deserving youth.

Important Points

- 1 ADHD children make up 5% of the population. A thorough evaluation can help determine whether attentional deficits are due to ADHD or due to other factors.
- 2 Once identified ADHD children are best treated with a multi-modal approach. Best results are obtained when medication, behavioural management programmes, educational interventions, parent training and counselling, where needed, are used together to help the ADHD child. Parents of ADHD children and adolescents play the key role of coordinating these services.
- 3 Teachers play an essential role in helping the ADHD child feel comfortable within the class room despite their difficulties. Adjustments in class room procedures and work demands, sensitivities, self esteem issues and frequent parent/teacher contact can help a great deal.
- 4 ADHD may be a life long disorder requiring life long assistance. Families and children themselves need continued support and understanding.

Suggested Reading

Journal of Paediatrics and Child Health (Official Journal of the Australian College of Paediatrics) (1996) Vol 32 – A series of articles on Attention Deficit/Hyperactivity Disorder.

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Can it be done?

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BACKGROUND

Management of children with learning and behavioural disorders has traditionally been the precinct of specialist paediatricians, psychiatrists, psychologists and teaching professionals. Networks and teams have not generally included general practitioners. In Geraldton a professional network of health and educational professionals were of the view that learning disorders including attention deficit hyperactivity disorder (ADHD) frequently went unrecognised or misdiagnosed. In 1996 the National Health and Medical Research Council recommended use of the DSM-IV American Psychiatric Association diagnostic criteria for ADHD. A multimodal model of shared care was considered optimal. In 1999 the US National Institute of Mental Health's Multimodal Treatment of Study of Children with ADHD was released.

OBJECTIVE

To outline the development of a program to educate and support local professionals (doctors, teachers, psychologists, nurses, counsellors) in the management of behavioural disorders in which specific goals were to:

- build capacity for accurate diagnosis and management of children with learning and behavioural disorders
- facilitate via the Midwest Division of General Practice, a network of professionals to assess and manage learning disorders, including ADHD
- create a model of shared care with potential for application elsewhere
- formalise shared care/coprescriber arrangements for stimulant medications between GPs and specialists, including fast-tracking of medication
- develop school networks for early identification, referral and support of ADHD cases.

DISCUSSION

Our creation of a strong professional network enabling a GP case manager role has been very successful. Multiple treatment successes have created much community goodwill toward the Midwest Division of General Practice and my private practice has changed forever with the inclusion of 200 ADHD families. Colleagues considering entering this area need to recognise the potential for disruption to both their practice and their personal lives. A well organised practice with firm boundaries for difficult cases is essential.

Becoming involved

Since 1992 I have been involved in the diagnosis and management of attention deficit hyperactivity disorder (ADHD). As a general practitioner obstetrician in Geraldton and practising old fashioned cradle to grave care, I have had a privileged opportunity to follow families over a 20 year period. It became apparent to me that a significant proportion of children developing behavioural and adjustment problems were not being effectively managed. The overworked services available at the time were GPs, counsellors, psychologists and visiting paediatricians. Formal testing for IQ, specific learning or attentional disabilities was seldom performed. Family behavioural therapy was routinely commenced without the benefit of diagnosis.

Existing Problems

This process resulted in the parents being blamed for much of the child misbehaviour. Many of these children were receiving remedial teaching, repeating academic years and were being suspended or expelled despite not having a formal educational psychometric assessment. Initiation and continuation of behavioural therapy prior to formal assessment is still widespread in school systems around Australia. Many intelligent children with unrecognised learning difficulties such as dyslexia and dysgraphia were lost in the system. Problems with literacy, numeracy, expression and behaviour are common in this group.

Formal assessment of these underperforming children resulted in a high proportion of them being diagnosed with ADHD. Surveys of WA schoolchildren have found a state prevalence of 5% but 11% for rural areas.ⁱ Our experience confirms this with a higher prevalence in some of the more isolated areas.

The Process

In 1997-1998, via the ADHD project, a program was developed to educate and support local professionals in the management of behavioural disorders. A local network of GPs, schools, psychologists, the local branch of LADS, social agencies and visiting developmental paediatricians was established. A formal shared care programme for medical management was agreed to at a series of coordinated care meetings, the level of skill and interest of GPs determining the extent to which they would become involved in diagnosis and treatment.

Shared care

Coordinated Care Meetings were attended by GPs, psychologists, teachers, school nurses, speech pathologists, occupational therapists, police, and representatives from social agencies, juvenile justice and the prison system, along with a broad range of health and educational professionals. At these meetings, a local schools policy on ADHD was developed.

Establishing a care manager role for local GPs required the visible transference of the 'mantle of authority' by visiting specialists. Developmental paediatricians and a child psychiatrist were invited to visit regularly and are supportive of coprescribing. Without their assistance, the Midwest Shared Care Programme would not have been successful. Our school subcommittee was chaired by a local headmaster and established a school network of ADHD liaison.

□ Professional networks

The project provided opportunities for extensive networking among health and educational professionals, via the school's subcommittee, workshops, seminars and through liaison with the local LADS branch. Favourable media publicity was received this networking has been spectacularly successful and is expanding beyond the formalities of the project.

□ Making the diagnosis

Cases are referred from teachers, psychologists, counsellors, remedial teachers, school nurses, child health clinics, day care agencies, support groups (ie LADS), doctors and family members. In addition, self referral often occurs with older cases. It is predicted that in the future, more referrals will come from substance abuse agencies, juvenile justice, police and the prison system.

Our assessments were based on the DSM-IV diagnostic criteria for ADHD (Table 1).ⁱⁱ Rating scales were found to be particularly useful. The Barkley Scales (Table 2)ⁱⁱⁱ are the most faithful to the DSM-IV, and were used on all cases. Perusal of the comments section in old school reports often revealed a pattern of under-performance. The more detailed Connors, Education Department of WA, and depression rating scales are efficient and reliable ways of gathering more information.

Examination was performed to check for other neurological disorders, defective hearing or sight and to measure height, weight, blood pressure and head circumference.

□ **Specialist referral**

The next step is specialist referral for confirmation of suspected cases. If the GP is happy that the diagnostic criteria have been fulfilled, a trial of dexamphetamine or Ritalin may be offered for urgent cases prior to specialist assessment. Australian regulations require the initial prescription for these medications to be made by a paediatrician or psychiatrist, but where access to specialists is limited, fast tracking of these cases works well.

Table 3, Medication

- Dexamphetamine and methylphenidate

These have been shown to be safe, effective and have few side effects in therapy or overdose situations. They should be offered to all ADHD cases.

- SSRIs

Sertraline is now being used in younger patients to treat depression, particularly when associated with the inattentive form of ADHD. Older cases of this type will commonly present with depression. It is best to treat the depression before starting the stimulant.

- Major tranquillisers

Risperidone and olanzapine are finding a place in the treatment of conduct disorders and rage attacks. Documented informed consent is essential if the drug company prescribing guidelines are breached.

- Clonidine

This has a role in treating insomnia hyperactivity and rage attacks particularly in younger ...

Early trial of medication

In order to fast track a trial of medication prior to a specialist appointment, details of the case are sent to a specialist accepting of shared care. This includes:

- a letter outlining reasons for the diagnosis, past history, examination and medications
- rating scales and a summary of old school reports
- details of any associated specific learning difficulties (SLDs) or comorbidity.

A prescription is posted to the patient and an application made to the Health Department of WA for GP coprescribing arrangements. Unavailability of an early specialist appointment need not delay commencement of a trial of therapy. The Geraldton Shared Care Programme has been well received by patients and professionals. Once the diagnosis is confirmed a multimodal treatment program is commenced.

Case review

Initial review is after a few weeks and then 1-6 monthly, depending on progress. I find it best to plan a review a few weeks into a school term. By that time student, parents and teacher will have had time to assess progress. A telephone reminder for appointments will considerably increase the likelihood of attendance in this chaotic area of medicine.

If in doubt

Difficult cases are best seen by a specialist prior to the commencement of treatment. Cases, which clearly do not fulfil the diagnostic criteria, are counselled accordingly and offered a follow up in 6-12 months or referral for a second opinion by a specialist.

Patient information

Early access to accurate information is important to increase patient and family knowledge of the disorder and its treatment. In particular, suspected cases require early access to information about:

- dexamphetamine/Ritalin – potential benefits and side effects
- monitoring requirements.

This information is best discussed during a counselling session between the GP, patient and family. They are given detailed information in the form of articles and handouts. Our city library

has a comprehensive collection of books, videos and audiocassettes donated by the local branch of LADS.

GP as case manager

General practitioners who become involved in the management of ADHD cases inherit some of the responsibilities previously shouldered by the specialist, such as communication with other professionals.

The multimodal web of shared care includes teachers, psychologists, counsellors, school nurses, speech pathologists, occupational therapists, physiotherapists and GPs. Efficient organisation is necessary to avoid duplication. I find it is both efficient and well accepted to use the referral/feedback letter to specialists as case notes and to send a copy of it to other stakeholders. My policy is to use the parents as the intermediary at all times. The new Coordinated Care Item Numbers for care plans and case conferences are suited to this area. Principal, educational psychologist and teacher are encouraged to contribute to the management of each case. We have found that a network of ADHD School Liaison People is an effective way of supporting families and networking/advocating within the school. When the school is not supportive there needs to be frank discussion of the situation to decide how much information to share.

Why bother?

A large and increasing body of evidence now exists to confirm the validity of ADHD. If the DSM-IV criteria are met, medication will improve significantly the symptoms of inattention, poor concentration, distractibility and hyperactivity in 75% of cases (Table 3). Predominantly inattentive ADHD is more difficult to identify and responds less well to medication. Many cases show spectacular improvement as the before and after Ritalin writing samples show in Appendix 5.

To medicate or not?

Since the 1997 project, results of the US Multimodal Treatment Study of Children with ADHD (MTA) have become available.^{iv} The study found that a carefully executed regimen of medication is superior to behavioural medication and nearly as good as a combination of both. As a result of this, Professor Taylor of London's Kings College has called for medication to be offered to all ADHD cases on diagnosis.^v

Conclusion

Clinicians venturing into this field need to take care. The inclusion of 200 ADHD families have forever changed the nature of my practice – downmarket to be sure and most would agree disruptive to other patients and staff. Raised eyebrows among colleagues and friends are the norm. I became involved when I recognised a large unmet need and now spend 20% of my office time in the management of ADHD.

Our division of general practice facilitated my entry into a specialist area. I am impressed with the results of treatment, feel I am 'making a difference' and the kids need help.

Implications of this discussion for the GP

- The capacity of the local Division of General Practice to improve health outcomes and expand GP involvement in professional networks has been demonstrated.
- Innovative models for rural Australia can be developed and run by the local professionals.

Appendix 7 How to Evaluate the Child with Specific Learning Disability

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Each month we present authoritative advice on the investigation of a common clinical problem, specially written for family doctors by the Board of Continuing Education of the Royal Australian College of Physicians.

Specific learning disability (SLD) refers to an underachievement in academic skills which is out of keeping with a child's level of intellect. Its prevalence ranges from 5 to 10%.

SLD is commonly associated with many paediatric conditions, such as prematurity, cyanotic congenital heart disease, brain injury and cranial irradiation. The increased survival produced by advancing technology has increased the need to identify and treat a wide range of sequelae. A child's success in education is not ensured by a normal IQ reading.

The comprehensive assessment and management of SLD demands interaction between health and education professionals. The demand for SLD services far exceeds resources, particularly in country communities. Many families are distressed by the lack of understanding among professionals of their child's disability. Such is the unmet demand for help that GPs are continually being consulted about SLD, yet they feel out of their depth.



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Recent review suggest that special education plays a part in overcoming SLD, but it is by no means the sole factor. Distractibility, poor organisation and low motivation (characteristic of attention deficit hyperactivity disorder [ADHD]), have been found to be associated with negative outcomes. Language deficits, ADHD and SLD are overlapping conditions. Between 50 and 80% of children with ADHD also display academic underachievement. Additional factors that have been found to be important for a successful outcome are maintenance of the child's self-esteem and improvement in the quality of the efforts that families make to help their learning disabled child.

The implication is that to address SLD effectively, management must go beyond special education. It should involve behavioural advice, family support and the possible use of mediation and other therapies (language, occupational, physiotherapy) – a repertoire which should be familiar to all doctors.

Definitions

Written language skills include reading, spelling and writing. A child's written language skills and numeracy skills reflect his or her academic proficiency. These are complex skills, yet most children learn them without difficulty. Previously known by such terms a 'dyslexia', 'developmental learning disorders' (DSM III-R and III), 'minimal brain dysfunction' and 'congenital work blindness', specific learning disability has no universally accepted definition.

NHMRC definitions

The National Health and Medical Research Council (NHMRC) differentiates between learning difficulties and learning disabilities. It defines learning difficulties as a 'generic term which refers to the substantial proportion (10 to 16%) of children and adolescents who exhibit problems in developmental

and academic skills. These difficulties are considered to result from one or more of the following factors: intellectual disability, physical and sensory defects, emotional difficulties, inadequate environmental experiences, lack of appropriate educational opportunities’.

The NHMRC uses the term learning disabilities to refer to ‘the much smaller proportion (2 to 4%) of children and adolescents who exhibit problems in developmental and academic skills which are significantly below expectation for their age and general ability. The disabilities, which often include severe and prolonged difficulties, are presumed to be intrinsic to the individual, but are not considered to be the direct result of intellectual difficulties. Neither do they appear to derive directly from inadequate environmental experiences or lack of appropriate educational experiences’.

These definitions have their drawbacks. The factors contributing to learning difficulties need to be evaluated in any child presenting with a learning problem because they require specialised services and some are reversible. However, the presence of these factors does not exclude the possibility of concomitant SLD – that is, where the various factors are simply exacerbating an underlying intrinsic learning disability. Additionally, SLD is frequently associated with organic disorders – not only those that affect the central nervous system (such as neurofibromatosis, epilepsy, treatment for malignancies and postmeningitis), but also other disorders such as asthma, diabetes and cardiac disease.

Other definitions

To clarify some of these definitional problems, the National Joint Committee on Learning Disabilities has defined learning disabilities as ‘a heterogeneous group of disorders manifested as significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual and are presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other disabling conditions (eg sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (eg cultural differences or insufficient/inappropriate instruction), it is not the direct result of those conditions or influences’.

This definition emphasises the heterogeneity of SLD, recognises that it extends beyond childhood and acknowledges that there is comorbidity with other developmental disabilities, organic disease and cultural disadvantage. The drawback is that it does not lend itself to an easily workable criterion for the diagnosis of SLD.

In NSW a widely held working definition of SLD is the unexpected failure of a child to acquire academic competence which is out of keeping with the child’s level of intellect – that is, the child is underachieving in relation to his or her intellectual potential. There is a gap between the child’s academic attainment and his or her intellectual level. This definition is not so rigid as to be overly exclusive, yet it allows for a balanced view which takes into account different factors (for example, language and attentional disorders) contributing to a child’s learning problems. Importantly, it is useful for establishing diagnostic guidelines.

Diagnostic Criteria

It is not surprising to find that there is no one ideal diagnostic criterion for learning disabilities. A functional criterion that is widely used flows from the ‘gap’ definition. It is termed the discrepancy criterion and states that ‘the presence of SLD is demonstrated by a substantial discrepancy between educational achievement (reading, spelling, mathematics, handwriting) and intellectual potential’.

Table 1. Early markers of learning disabilities

Speech and language

Articulation deficits

Slowness to add words

Inability to follow more than one instruction

Motor clumsiness

Difficulty in self-care skills, such as using cutlery, dressing and later buttoning and tying shoelaces
Difficulty riding a bicycle, swimming and playing ball games

Behavioral disturbances

Difficulty settling in infancy
Constant flitting from one unfinished activity to another
Lack of interactive play
Impulsive reactions

Educational or academic achievement is measured by standardised tests of reading, spelling and mathematics. Handwriting is seldom measured as there are few good, time efficient standardised tests of handwriting. Intellectual potential is measured by standardised psychological tools which give an intelligence quotient (IQ). Therefore, to determine the presence or absence of SLD, it is usually necessary for a trained psychologist or school counsellor to administer standardised tests to measure both IQ and scholastic achievement.

Simply measuring one and not the other can be misleading. Learning disabled children are often of average intelligence. An isolated IQ test result indicating such normality of overall cognitive function is falsely reassuring and may result in an unnecessary delay in referral for services or inappropriate educational placement. The essential discriminator is the gap between the child's intellect and his or her ability to acquire academic skills at a comparable level. Such a discrepancy may also exist for children whose intellect is in the borderline or mildly retarded range.

Administering only an educational achievement battery without an IQ test will more often than not miss learning disabled children in the 'gifted' range of intelligence. Such children may be functioning at an age-appropriate level in their school work, but are falling far short of their intellectual potential.

Office assessment of SLD**Early indicators**

Unlike developmental retardation, which is a less frequent condition often noted in infancy, learning disabilities are commonly identified later, in the school years, when the demands of school highlight the child's inadequate performance. The initial investigation in a child with a learning disability is a careful history.

Many of the early markers of learning disabilities are subtle (Table 1). These early disturbances are mild developmental delays or deviations which place the child at increased risk for later learning disabilities. They are detectable in three areas: speech and language, motor control (Figure 1) and behaviour.



Figure 1. Poor motor control – for example, difficulty tying shoe laces – may be an early indicator of learning disabilities.

Source: Austral International.



Figure 2. Mechanistic play with toys and puzzles may be normal in children with SLD, but the ability to use expansive imagination in play activities such as pretending and role-playing may be deficient.

Source: Austral International.

Indicators in the early school years

By the time a child starts school, the subtle early pointers to SLD may have been overlooked. Children learn coping strategies and avoidance tactics, and their parents compensate for their deficits. These children may wear loose clothing without fastenings, have Velcro instead of laces on their shoes, and their parents may set out their clothes for them and tag the front or back. They may learn to communicate using short sentences and gestures which are readily decoded by those close to them, but not by those unfamiliar to them. Articulation deficits may have resolved, albeit late. Their behaviour is under greater voluntary control and may not present as a problem. They learn to keep quiet when struggling at school so as not to draw negative attention.

Although the language and other deficits become less noticeable under these circumstances, they may become increasingly detrimental to the child's social and academic development. Commonly, difficulties with receptive and expressive language persist (see the box below). Unfortunately, the expressive disorders – in narrative discourse or pragmatics – do not always show up on standardised tests of language used to screen children with suspected language problems. However, when they are identified, there are ways to enhance the child's language skills.

Language difficulties

In the school years, speech problems are replaced by language problems, which may be receptive, expressive or both receptive and expressive in nature.

***Receptive Impairment**

Literal Meaning

The child's use of language is concrete and he or she is unable to deal with abstract thought, reasoning and inference (for example, in analogies such as 'boys are to men as girls are to...'). They have no expansive ideas. Imagination is limited.

Sequence

The child has difficulty with time and sequence, confusing before and after, yesterday and tomorrow, the days of the week and the months of the year.

Comprehension and organisation

Children with comprehension problems may carry out one instruction but misunderstand, confuse or forget multi-part instructions. Verbal responses are just 'off target' or tangential.

Expressive Impairment*Story Telling**

The child gets caught up with detail when telling a story and misses the big picture. He or she skips from one topic to another, losing the listener.

Work retrieval

The child's conversation or story is punctuated by long pauses and empty fillers, such as 'umm' or 'aah'. Circumlocutions are used in place of the work the child cannot find. He or she recalls fewer words and is slower to recall words.

Social conversation

The child seems unable to regulate the content and interactive aspects of conversation to accommodate the needs of the listener. Body language and other nuances are misread.

Lack of fluidity

The child's language may sound mature, but careful probing reveals that it consists of whole phrases repeated by rote, the child being unable to modify the language to generate new expressive combinations.

- **Social and emotional function**

Social skills are closely related to language ability and behavioural control. Because children with SLD are at increased risk of disorders of language and behaviour, their social functioning may be compromised.

Social impairment in children with SLD**Social language use**

- ◆ Misunderstanding and ineffective use of language in social contexts leads to not knowing what and when to say things in such a way as to be socially acceptable.

Social behaviour

- ◆ Children with SLD seem unable to modify their behaviour to a particular social situation and to be sensitive to social feedback.
- ◆ Impulsiveness leads to quick, unthinking responses during conflict
- ◆ Children with SLD can 'come on too strong' and be bossy, but at the same time are easily led into mischief
- ◆ They want to have friends but seem unable to keep them.

- **Play**

A lack of expansive imagination is reflected in the child's play; make believe, role playing and the ability to pretend are deficient. Mechanistic play with toy cars, Lego, puzzles and the sandpit are intact (Figure 2).

- **Self-esteem**

Self-confidence is eroded in children with SLD. They often play by themselves or with children who are younger or much older who can adapt to their less mature social skills.

Visual perception functions

The ability to orient in space develops late in some children with SLD and problems may continue even into adulthood. Such children have difficulty with laterality and identifying left and right sides. This is a normal finding up to the age of eight years, but left-right confusion and persistent disorientation with mirror left and right sides indicates poor perceptual function. Earlier in life this may be noticed as a reluctance to dress independently, and attempts at dressing result in shoes and clothes being put on the wrong way around. The child may be baffled by the number of different ways a pair of underpants can be put on.

Later the child has difficulty finding his or her way around even familiar locations, taking wrong turns and getting lost. The child is disorganised when getting the desk set up for home-work. In adulthood, reading road maps proves to be an insurmountable task.

Although letter reversals are a part of the normal developmental process of learning to read or write, children with visual perception problem are more severely affected and reverse not only the commonly confused letters (b/d, p/q, s/z) but many others as well.

Behaviour – ADHD

In a proportion (which may be up to half) of children with learning disabilities, the behaviour problems that manifest in infancy are intrinsic and persistent, and present as ADHD. Children with ADHD have difficulty sustaining attention and are impulsive. Their impulsivity may show up in the silly mistakes they make in school work, which is easy and well within their capability. Such mistakes give the impression that these children are sloppy or not trying their best. On the contrary, they are often putting in 100% and this results in easy fatigability. Unfortunately their effort is not matched by the quality or quantity of their output.

According to the latest DSM IV criteria, there are three types of ADHD: predominantly inattentive type, predominately hyperactive-impulsive type and combined type¹.

- *Predominantly hyperactive-impulsive type and combined type.*

Children with predominantly hyperactive-impulsive type or combined type ADHD are noticed in preschool or early in primary school where their impulsivity and high spirited play cause trouble. In the playground their teachers report excessive demands, aggression, dangerous play, noisy play, disregard for rules, inability to learn from experience and lack of awareness of the consequences of their behaviour. In the classroom, difficulty remaining seated, talking out of turn or excessively, interjecting, disrupting and acting the class clown may predominate. They rush through their work, finishing first but making many silly mistakes.

- *Predominantly inattentive type.*

The inattentive, disorganised ADHD children are easily missed because they are the quiet underachievers. They remain undetected as they strain and struggle to overcome their leaning disability, which is compounded by difficulty maintaining focused attention on their work. Seated at their desk, their mind drifts. They are preoccupied by internal distractions. This does not disrupt the class or bring them to the notice of teachers – by all appearances they are hard at work. They fidget and fiddle and are slow to get started. The main complaint may be that they do not complete set work in the allocated time, for which the blame is easily, but mistakenly, put on their learning disability. These children present later, usually after eight years of age.

Memory

Do not be assured by a child's intact long term memory. 'He can remember details about an event that occurred three years ago which the rest of the family has forgotten', is often given in reply to questions about memory. The child may have a remarkable memory for specific dates or events which occurred some time ago, but cannot recall what happened at school that day. Short term or

immediate memory is often weak. This can be tested using digit span forwards and backwards tests for verbal sequential memory, and by other standardised psychology tests for visual sequential learning and memory.

More importantly, children with SLD have difficulty with active working memory, which is also known as convergent memory. This is the ability to hold several pieces of information in the mind in order to be able to manipulate them simultaneously. Active working memory is an important skill in many educational tasks. For example, in reading one utilises active working memory to decode the sounds for each letter, blend them together into a recognisable word, pronounce the word and put it in the context of what was read before in order to comprehend the sentence or paragraph. Active working memory is part of the executive functions of the brain (see below).

Indicators in high school

Executive function

Executive function includes the ability to:

- ◆ Self monitor
- ◆ Organise thoughts into coherent sequences and presentations
- ◆ Process more than one piece of information simultaneously
- ◆ Inhibit oneself from moving to activities that are more attractive while persisting with tasks that are of less intrinsic interest, and be motivated to do this because of an orientation towards the future².

The executive functions are controlled by the frontostriatal circuits of the brain. Executive functions allow us to reflect before acting or speaking and so modify our behaviour to that which is appropriate. It allows us to formulate action plans in response to perceived stimuli and to develop compensatory adjustments for some of our weaker areas. Executive function is weak in children with ADHD. The presence of executive dysfunction causes even the child with no other risk factors for learning disability to present with poor school output. The ramifications of executive dysfunction become greater and greater the higher a child advances in the educational system.

Passive learning styles

Children with SLD associated with ADHD are usually passive learners. They do not use active learning strategies while studying (see Table 2). They need to be taught active studying strategies in order to keep themselves on task, to rehearse and encode information more efficiently.

Table 2. Active learning strategies

Revision

Highlighting
Underlining
Subvocalising

Exam technique

Paying attention to question detail
Allocating time

Planning

Using a calendar
Filing
Using summary cards

Organisation

Using a diary
Using a clock or timer

Self-evaluation

Proof reading
Checking for errors

The role of drug therapy is SLD

If ADHD is present in the underachieving child, it is a factor that is reversible with the use of medication. Stimulants such as methylphenidate (Ritalin) and dexamphetamine (Dexamphetamine Tablets) are the first-line drugs for ADHD. Their efficacy is greater than 70%. The stimulants do not cure ADHD and they are not a substitute for remedial and behavioural efforts. They enable the child 'to be available' for teaching and they improve speed of output, short term memory, self motivation, the ability to monitor for errors and attention to detail. Other medications may be chosen depending on their cognitive and behavioural benefits in ADHD³, but discussion of such medications is beyond the scope of this article.

In the absence of other mitigating factors, if the child is not progressing despite appropriate remedial efforts, the possibility of ADHD should be considered. As noted previously, the most common subtype of ADHD in the learning disabled population is not the forgetful, disorganised child whose mind drifts quietly and poses no behavioural problem. These children are often not rated by their teachers as having a 'behavioural problem', hence they are easily missed.

The role of the GP

It is the role of the GP to take a careful history and identify the presence of SLD and coexisting disorders. Organic disorders should be excluded and the child's hearing and vision checked. Behavioural disorders should also be excluded. Short, quick checklists, such as Conners' Abbreviated Questionnaire, can be completed by the child's parents while waiting or prior to the visit. The checklists screen for behaviours that constitute ADHD and can be rapidly scored.

The GP can train parents in behaviour management and fostering socialisation and self-esteem in their child. The GP can collaborate with and refer to other professionals, such as tutors, special educators, language and occupational therapists, psychologists and paediatricians.

The role of the psychologist or school counsellor

In order to decide if a child is uniformly below average across all areas of his or her capabilities or whether academic skills are falling behind intellectual potential, the GP will need to request from the school counsellor or psychologist:

- ◆ A general cognitive or intellectual assessment
- ◆ A standardised assessment of academic function (educational testing)

A low score in the former indicates a global intellectual impairment which is not a specific learning disability. The latter may indicate a specific learning disability.

There are many different test batteries from which the psychologist may choose to evaluate these areas. An in-depth knowledge of the individual tests is not necessary; however, several tests deserve special mention because of their widespread use in schools.

WISC-3

The Wechsler Intelligence Scale for Children – Version 3 (WISC – 3) assesses general intelligence. Mean IQ is 100 with a standard deviation of 15. Therefore, the range of average IQ is from 85 to 115. The WISC – 3 differentiates between 'verbal' IQ (that is, for those skills that tap language ability) and 'performance' IQ (that is, for those skills that rely more on nonverbal ability, spatial perception and organisation). The verbal and performance IQ tests are not a substitute for formal language, occupational therapy or optometric evaluations, although they may indicate a need for such evaluations if one score is found to be significantly weaker than the other.

The WISC – 3 can be factor analysed to give four indices: verbal comprehension, perceptual organisation, freedom from distractibility and speed of information processing. Relatively lower speed of processing and freedom from distractibility indices can suggest the presence of ADHD.

NEALE – R

The Neale Analysis of Reading – Revised (NEALE-R) is a standardised test of reading ability. There are two parallel forms (Forms 1 and 2) allowing the test to be repeated over the short term to assess a child's response to treatment or remediation. The results of the NEALE-R test are reported as mental age equivalents for reading accuracy, reading rate and reading comprehension.

Spelling tests

Spelling tests in common usage are the South Australian Spelling Test, the Schonell test and a spelling subtest from the Differential Abilities Test. They usually give an age equivalent for spelling ability. Unfortunately, neither the NEALE-R nor the commonly used spelling tests define the child's profile of strong and weak learning strategies. These are usually observed by the examiner during testing.

The role of the paediatrician

Learning and developmental disabilities in children is a new subspecialty in paediatrics. The role of the paediatrician includes coordinating services for children with learning disabilities and bringing together the disciplines and interpreting the findings. The paediatrician is often asked to be an advocate for the child, to mediate between the family and school, and to devise specialised strategies for the home and classroom.

Parents are often confused as to why an intelligent child fails in school. It is often necessary to demystify learning disabilities and to explain why the child is the way he or she is. The many alternative therapies on offer may also need to be discussed. These include optometric training, megavitamins, altered diet, biofeedback, neuromotor therapies (such as kinaesthetics and sensorimotor integration) and tinted lenses. The families need support in making decisions – for example, regarding appropriate school placement. The paediatrician may also initiate drug treatment and monitor for associated conditions, such as ADHD, Asperger's and anxiety disorder.

Conclusion

Learning disabilities are a heterogeneous group. The signs are subtle and the test results often near normal. The more severe spectrum of developmental disorders (mild to severe retardation) are better defined in terms of detection and available services. Children with learning disabilities fall between the cracks. These children may not be physically ill and most of them do not have a visible handicap. However, their disabilities are very real and are as disabling as physical defects for which we would not hesitate to make significant adjustments. Their families are fighting an uphill battle to maintain the child's self-esteem and emotional well-being. There is no one formula for the treatment of children with learning disabilities. By working across the disciplines we will give these children the best chance of a well adjusted and successful adulthood.

References

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- 2 Denckla MB. Biological correlates of learning and attention: What is relevant to learning disability and attention-deficit hyperactivity disorder? *J Dev Behav Pediatr* 1996; 17(2): 114 – 119.
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Appendix 8 - Understanding ADHD

Dr Christopher Green – May 1997

Reproduced by Courtesy of the Author Dr Christopher Green.

Attention Deficit Hyperactivity Disorder (ADHD) refers to a cluster of learning and behavioral problems that cause a child to underfunction for intellect and underbehave for the quality of parenting they receive. These behaviour and learning problems are caused by a subtle difference in the fine tuning of the normal brain. This difference seems to be related to a slight imbalance in the brain's message transmitting chemicals, the neurotransmitters. This mostly affects those parts of the brain which control reflective thought and putting the brakes on ill-considered behaviour (the frontal lobes and their close connections).

ADHD affects at least two percent of the school-age population, and some quote figures as high as five percent. Boys are more affected than girls. The first behaviours of ADHD are usually apparent before three years of age, but few of these children require treatment before they start school. ADHD is a chronic condition and it is now believed that approximately 60% will take some of their symptoms with them into adulthood. The successful treatment of adults with ADHD has been an exciting new development.

A MODERN VIEW OF ADHD

When parents describe their ADHD child, they refer to a blend of four separate parts, only two of which correctly fit ADHD diagnosis. The two parts of true ADHD are ADHD –*Hyperactive-Impulsive-behaviours*, and ADHD-*Attention Deficit-learning weakness*. These two ADHD parts are then affected by the presence or absence of a third part, *the comorbid conditions*. Comorbid refers to associated problems which are not caused by ADHD but coexist in over half of the children who have true ADHD eg dyslexia, Oppositional Defiant Disorder and Conduct Disorder. Finally this mix of ADHD and comorbid conditions is greatly influenced by the fourth part, *parenting* and support in the child's environment.

ADHD – The Four Parts

The First Part: ADHD-Hyperactive Impulsive behaviour (poor self control of behaviour).

Impulsiveness: Speaks and acts without thinking, interrupts, calls out in class, low frustration tolerance, may appear aggressive, difficulty putting "the brakes on behaviour", rushes carelessly through work, accident prone.

Demanding: Unaware when to let a matter drop, intrudes, generates tension.

Social Clumsiness: Misreads social cues, overpowers, bosses, wants to do things their way, acts silly in a crowd, intrudes into other's space.

Overactivity: Restless, fidgety, taps, fiddles, has to touch, overcharged, has an overwound spring.

The Second Part: ADHD-Attention Deficit and learning weakness (problems of executive control)

Inattention: Works poorly without one to one supervision, difficulty regrouping after distraction, self distracts, daydreams, flits from task to task, inconsistent work output, gets overfocused on one part and misses the big picture.

Poor short term memory: Forgets instructions, loses focus, reads but does not remember, difficulty with mental arithmetic.

Disorganisation: Forgets homework books, misjudges time, procrastinates, poor prioritisation, variable performance, poor planning.

NOTE: - Most ADHD children have a mix of both, the first (behaviour) and the second (inattention-learning) parts. Some have one of these in isolation (eg ADHD-predominantly inattentive). This is probably more common than we realise and is not picked up as these children underachieve, but do not “underbehave”. A small group have an even purer presentation of ADHD (inattentive only) which leaves them dreamy, drifty “space men”. This dreamy form of ADHD is made much worse by its strong association with specific learning disabilities, particularly dyslexia.

The Third Part: Comorbid Conditions

- Over half those with ADHD have at least one associated comorbid condition.
- Between 40% and 60% have Oppositional Defiant Disorder where they say “no” on principle.
- Approximately 50% have a Specific Learning Disability (eg dyslexia, language delay disorder, weakness in mathematics etc)
- Other comorbidities are Conduct Disorder, Tic Disorder, Poor Coordination, Depression, Obsessive Compulsive Disorder and Bipolar Disorder.

The Fourth Part – The Child’s Living Environment

- Supportive nurturing parenting versus hostile critical parenting.
- Supportive schooling versus unaccepting, punitive education.
- An extended stable family versus an isolated, unstable rejecting family.

THE TYPICAL PRESENTATION

When the Hyperactive-Impulsive behaviours predominate these children are "out of step" with brothers, sisters and other children. On history most of these were easy babies though once they started to walk many were active and into everything. At preschool some were more restless and found it hard to sit at story-time, others had low frustration tolerance and caused great trouble through their unthinking aggression to other children.

At home parents describe a child who demands, intrudes into their space and generates tension. These children stir, wind-up their siblings and don't know when to let a matter drop. Many have a short fuse, act without thinking, interrupt and are accident prone. Some are messy, disorganised, forgetful, restless and constantly fiddling. Many do not get asked to birthday parties.

Most came for treatment at the start of school where they were said to be distractible and disruptive. These children do best when stood over or they don't complete work. Teachers are confused that such an apparently intelligent child is so erratic and underachieving. Some have been tested by the school psychologist, who often finds a surprisingly good concentration in the 1:1 of the quiet test room. In children who have the predominantly inattentive type of ADHD, problems of learning, memory and underachievement at school are the main complaints.

WHEN IS THIS NORMAL - WHEN IS IT ADHD?

There is no clear cut off between those who have a normally active, impulsive and inattentive temperament and those who suffer ADHD. If these behaviours are not causing anyone any trouble, they can be ignored. If these behaviours are causing a child to significantly underfunction at school and underbehave at home, they must be taken seriously.

If we use the American Psychiatric Association's criteria for the diagnosis of ADHD (DSM IV), six out of a list of nine difficult behaviours must be present but life is not as simple as this. If one child has these six behaviours, yet has a saint for a mother and the best teacher in Australia, we may not consider diagnosing or treating. If there are only five behaviours but home and school are hanging by a thread, this child may be diagnosed and treated for ADHD. If a child has only four of the listed behaviours, they are not called ADHD, but they will still be difficult for parents and teachers. Academics deal in pure black and white situations, realists see life in much more flexible terms.

THE CAUSE

Until relatively recent times, professionals blamed the parents attachment or relationships for causing these children's behaviour. Others said that ADHD was due to additives in the food. Now we know that neither of these are the cause of ADHD, though of course, the standard of parenting and some food substances may influence already existing ADHD. Two things are for certain. Firstly, ADHD is strongly hereditary and secondly it is a biological condition.

Heredity is obvious, as so many families have a parent or close relative who has similar problems. If one identical twin has ADHD there is over a 90% chance the other will also have the condition. If one sibling has ADHD there is about a 30% chance another child will also be affected. The majority of children in my care have a parent or close relative who has experienced many of the same difficulties.

For years it has been presumed but not proven, that ADHD was caused by a minor difference in brain function. Now this can be shown by the most modern research scans (PET, SPECT and special MRI). In ADHD these scans show a slight difference of function and anatomy in the behaviour inhibition areas of the brain (the frontal lobes and their close connections). The mechanism of this underfunction seems due to an imbalance of the brain chemicals which transmit impulses between certain nerves (the neurotransmitters - noradrenaline and dopamine). The effect of the stimulant medications, which are used to treat ADHD, is to normalise this imbalance of these natural chemicals. One researcher has shown a normalisation of the PET scan after administration of stimulant medication.

DIAGNOSIS

It is confusing for parents as many professionals claim that their method is the only way to diagnose ADHD. There is no one conclusive test and such is the greyness of the cut-off point, that no two professionals will have exactly the same limits regarding diagnosis. Diagnosis can be approached in four steps.

- 1 **Be alerted to the possibility of ADHD.** (The child underfunctions at school for intellect and underbehaves at home for the quality of parenting, ie they are significantly out of step with brothers, sisters and peers who have the same background and level of development).
- 2 **Exclude ADHD lookalikes.** (Exclude major development delay, the normal "spirited" preschooler, problems which appear principally of management and family dysfunction).

- 3 **Pointers towards diagnosis.** (Parent/teacher questionnaires, test profiles, brain tests, a continuous performance test -[CPT]). The CPT eg Conners' or TOVA, is of particular help when the presentation is predominantly one of a learning problem or the picture is clouded by comorbid conditions.
- 4 **A careful history and observe the child.** "When she walked she was into everything". "At the start of school he was disruptive and distractible". "She only works well when stood over". "He goes on and on, intrudes and causes tension". "He's impulsive, short fused, and socially out of tune". "Discipline and management is many times more difficult". "She's disorganised and has a poor short-term memory". "School reports say he could do better if he could attend".

NOTE: There is no black and white dividing line that pinpoints the 2% that we believe have a major degree of ADHD. The cut-off is blurred by other factors such as, the calmness and consistency of home, the tolerance of the parents and the skills of the class teacher. Diagnosis sometimes remains a matter of trial and error. I believe that a robust response to treatment, confirms the correct diagnosis, though the suggestion that diagnosis should be made by means of treatment is seen as "politically incorrect".

TREATMENT: Managing ADHD involves:-

- Helping **school** and the classroom teacher.
- Structuring **home** for peace.
- Boosting self **esteem** and developing outside interests.
- Considering **other therapies**.
- **Medication**.

School

- Accept this is not naughtiness - it is part of the child's make-up - they can't help it.
- They need a quiet class run by a teacher who will be there every school day, all year.
- A firm but encouraging teacher who knows when it is best to back off.
- Seating near the front, away from distracting influences.
- Clear stepwise instructions and constant feedback.
- Special supervision at times of change, eg. coming in from break or on a school excursion.

Home

- Accept that this is the way your child has been made and no amount of force will beat it out of him. Be patient, have realistic expectations.
- Normal behaviour techniques work poorly in the ADHD child, because they have a biological difference in their ability to inhibit behaviour (they act before they have thought of the consequences). For this reason disregard any expert who believes that a standard behavioural program or parent effectiveness course will easily change your ADHD child.
- It is known that poor parenting can cause bad behaviour, but with ADHD, the child's bad behaviour causes good parents to appear poor.
- Parents must think before they act and learn to ignore all but the important misbehaviours. Routine is essential. Change behaviours using small, well-planned steps.
- Rewards should be frequent and constantly repeated.
- Don't lock horns with an ADHD child, then increase the pressure. This produces a battle of wills, two angry parties, opposition, resentment and damage to relationships.
- Don't argue. Don't get heated. Don't escalate. Use a matter of fact, unemotional, controlled voice.
- Give yourself room to manoeuvre

- *State the rule.
- *Count to three.
- *Use time out.
- *Give choices.
- *Don't force into a cul-de-sac.

- Remember, even the worst behaved child is good 95% of the time. Reward this positive side, catch them being good!

Esteem

- Children must be encouraged to try out a variety of sports, hobbies and interests in the hope they may savour success at something.
- As parents, we must watch our negative words. Listen, value what they say and give reasonable responsibility.
- Swimming, bike riding, bush walking, fishing, cooking, judo, computers, may all be useful. Team sports and scouts suit some ADHD children but not all. Success at sport, when present, gives an immense boost.
- Out of school tutoring may be useful, but don't over do it. This puts all the focus on the child's areas of failure.
- Encourage friendships and try to take a friend on outings and activities.

Other therapies

- Diet does not cause ADHD. Most current research suggests that less than 10% of ADHD children are significantly affected by natural or artificial preservatives, additives and colourings. Where diet is incriminated, most parents have pinpointed one or two foods which they now avoid. Irritability and overactivity appear the most diet sensitive behaviours, but these are not the main problems of the true ADHD child.
- Occupational therapy helps the poor handwriting of ADHD.
- Too much or too little sugar does not influence ADHD behaviour.
- The brainwave modifying techniques of biofeedback are viewed by many researchers as controversial. Multi-vitamins and natural products are unproven in treatment.
- Eye exercises, tinted lenses and sensory integration are all of questionable benefit in the treatment of learning and attentional difficulties.

NOTE: I urge all parents to be sensible when it comes to treatment. Use the well researched therapies that are known to be safe and successful, ahead of those that are controversial and unlikely to bring big benefits.

Medication

The main medications used in ADHD are the stimulants dexamphetamine and methylphenidate (Ritalin). These have been shown to be effective in over 80% of ADHD children in the short to medium term. There is still a lack of data on the long term benefits. Other non-stimulant drugs, eg clonidine (Catapres) and imipramine (Tofranil) are also used either alone or in combination. Clonidine is of particular use when stimulants alone are unable to adequately control a child's impulsivity and overactivity. This is also used when settling to sleep is a major problem. Tofranil is the second line drug which helps behaviour and attention when the stimulants are shown to be ineffective. The non-stimulants are not without their risks and must be used cautiously. There are particular dangers with accidental overdose so tablets must be given correctly and stored securely.

Stimulant medication was first used in ADHD in 1937. The drug Ritalin has been used since 1958. These preparations have now been extremely well researched and proven. See full details and research references in the book, *Understanding ADD*.

There are still people in this country who state that stimulants are new, controversial, addictive, dangerous and unproven. In 1997 this is just not true. Be extremely suspicious of anyone who voices such out of date ideas, as the rest of what they say may be equally unreliable. There are people who still believe the earth is flat, but that's their problem.

With stimulants:-

- These drugs act by normalising the imbalance in the brain's natural neurotransmitter chemicals, ie they increase noradrenaline and dopamine.
- These are not sedatives, they enhance normal brain function.
- Though stimulants may work to a minute degree in the child without ADHD, when effective in ADHD the benefits are usually quite miraculous in both behaviour and learning.
- Stimulants help focus attention, keep the mind on task and allow the child to consider the possible repercussions before they act.
- Successfully medicated children become more organised and are easier to reach.
- Stimulants are short acting, starting in about ½ hour while the effect has largely passed in 3 to 5 hours. Though the effect is short lived, about half of the medicine is still in the blood after 4 hours and one quarter after 8 hours. For this reason we tend to give larger doses early in the day which are then topped up by subsequent doses eg. 1½ tabs 8am, 1 tab 12MD, ¾ tab at 3:30pm.
- Addiction has not been described in the correctly diagnosed ADHD child. Stimulants help the child focus and bring them into reality. You don't get addicted to reality.
- Stimulants are usually given in either 2 or 3 doses in the day.
- When there are only problems with schoolwork, medication is only given on school days. When there are problems with behaviour, socialisation, and stress to parent-child relationships, medication is given every day, including weekends and holidays.
- The medication Ritalin is similar but not identical to dexamphetamine. I recommend both preparations be trialed to ensure we prescribe the most effective medicine with the fewest side effects.
- The most common side effect, when starting medication, is for the child to become withdrawn, teary and irritable. This is only at the time of commencing medication or raising the dose. If it happens this can be removed by gradual introduction or trying the other medication.
- Many children report reduced appetite and some find it is more difficult to settle to sleep. These and most other problems can be avoided by careful fine tuning of the dosage.
- Though long term side effects are not a concern, the benefits of long term therapy are still to be conclusively proven.
- One study has shown that ADHD children who are treated with stimulants are less likely to drop out of high-school or engage in substance abuse, than the untreated.
- ADHD children become closer and relate better to their friends and families when given medication. Relationships are of vital importance for long term happiness and esteem.
- Side effects are remarkably rare and usually avoided when your doctor trials both preparations and fine tunes carefully.
- Medication will continue for as long as the parents and teachers see significant benefits. If ever in doubt, stop for a week and see what happens.
- Parents, not doctors, are in charge. Doctors can recommend these medications, but it is always the parents who have ultimate control. You must stop the medication if you think it is not working or is causing any unwanted side effect. If you are worried you must call for help.

Remember that untreated ADHD is not without its hazards. Many untreated children are at war with their parents and arrive in adolescence with destroyed family relationships. Some are accident prone, a number being seriously injured or even killed. There is no completely safe drug, but the dangers of medication are much less than the emotional and physical dangers of untreated ADHD.

FINAL THOUGHTS

ADHD is a real condition whose importance has only recently become understood in Australia. When misdiagnosed and mistreated, this can cause amazing stress and long term damage to esteem and family relationships. At school, these clever children underfunction and start to believe they are stupid.

With medication and other treatments we cannot cure ADHD. Our aim is to keep the enthusiasm to learn, maintain self esteem and to keep families at peace, until hopefully adolescence will bring some academic acceleration and a more reflective style of behaviour.

In the past most ADHD children remained undiagnosed. Many arrived in adulthood with a belief they were inferior and dumb. This may have been acceptable in the past, but we are not going to let it happen in 1997.

For references and details of the above outline-please see-*Understanding ADD*

Dr Christopher Green and Dr Kit Chee-Doubleday, Sydney, December, 1994

Dr Christopher Green MB. BCh. BAO. FRCPI. MRCPUK. FRACP. DCH.

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Appendix 9 - NHMRC Recommendations on Attention Deficit Hyperactivity Disorder

Reproduced from the 1996 Report of the National Health and Medical Research Council on Attention Deficit Hyperactivity Disorder.

Criteria for diagnosis

Recommendation 1

As a minimum, the criteria set down in DSM-IV should be fulfilled before a diagnosis of ADHD is made.

Assessment

Recommendation 2

A comprehensive assessment of a child with suspected ADHD should include the following elements:

- **History:** Family, past and current medical, psychosocial;
- **Medical:** Physical and neurological examination and any appropriate investigations;
- **Development:** To exclude significant specific and/or global problems, hearing and vision difficulties, and further referral as appropriate;
- **Behavioural:** Description of behaviour in various settings, especially home and school; and
- **Educational:** A review of classroom observations and prior testing, including estimates of intellectual capabilities (incorporating intellectual/cognitive assessment), strengths and weaknesses and measure of academic achievement, including language development.

Recommendation 3

Multiple sources of information should be utilised during assessment eg parents, care givers and relevant professionals, especially teachers.

Rating Scales

Recommendation 4

Appropriate rating scales should be used as part of the assessment for obtaining systematic information from different settings and to gauge treatment response.

Brain imaging and neurological tests

Recommendation 5

Further investigations such as brain imaging and neurophysiological tests are not recommended as part of the routine assessment of ADHD.

Overall management

Recommendation 6

A specific and individualised management plan should be formulated for each child with ADHD and their family.

Recommendation 7

Associated problems such as learning difficulties, peer relationships, low self-esteem, family dysfunction and comorbid conditions should be specifically addressed in the individualised management plan.

Recommendation 8

Treatment should be multimodal and involve consideration of simultaneous medication use, behaviour management, family counselling and support, educational management, and specific developmental issues.

Recommendation 9

Treatment and management of ADHD should be reviewed regularly. At least once every year a review should be made using the same parameters as for the initial diagnosis. Such a review should collect information from multiple sources and specifically evaluate any deterioration following significant interruptions to the medication regimen.

Recommendation 10

Further research should objectively evaluate methods of assessment and management of ADHD.

Recommendation 11

Further research, including comparative studies, should be undertaken to establish the cost-effectiveness of the various components of management of ADHD.

Recommendation 12

Appropriate, relevant and up-to-date information on ADHD should be available and accessible for children, families and professionals.

Use of stimulant medication**Recommendation 13**

The use of stimulant medication should be considered as part of the management plan for most children with ADHD. The efficacy and safety of stimulant medication has been established for short-term use.

Recommendation 14

While the response of most children is similar for both methylphenidate and dexamphetamine, the efficacy and side-effects are not identical. Some children may respond better to one than the other. Therefore, children should have equal access to whichever drug is necessary for their optimal treatment. Further research is required to determine the comparative effectiveness and cost-effectiveness of the two medications, and to determine criteria which will predict the optimal therapeutic option for individuals.

Recommendation 15

The routine use of placebo to assess individual response to treatment is not recommended.

Recommendation 16

Further research should examine the efficacy and safety of medications, particularly psychotropic medications, and prolonged or continuous use of stimulant medication.

Recommendation 17

Comorbid conditions frequently coexist with ADHD and need to be addressed in management. Where drugs other than stimulants and/or multiple drugs are considered, expert opinion should be sought.

Prescription of psychostimulants**Recommendation 18**

Where State/Territory authority is a requirement for prescription of psychostimulants, authorising bodies should use criteria which are consistent with the recommendations in this report. Uniform data collection at State/territory level is recommended to assist monitoring and research.

Diet

Recommendation 19

While some studies have suggested that food and food additives influence some behaviours in some children, dietary manipulation is not recommended in the routine management of ADHD. If a special diet is instituted, it should be under the careful supervision of a qualified dietitian, preferably with experience in this area.

Other therapies

Recommendation 20

Other therapies such as optometric training, tinted lenses, megavitamins, and patterning are sometimes considered in the management of learning difficulties. There is no scientific evidence to support their use in the management of ADHD.

Management in preschools

Recommendation 21

The diagnosis of ADHD in toddlers and preschoolers is complicated by normal developmental changes and environmental factors. Behaviour management and parent guidance is essential, and medication should be used with caution.

Management in adolescence

Recommendation 22

The diagnosis of ADHD in adolescents is often complicated by comorbid conditions, and the sequelae of long-standing dysfunction or other significant developmental changes. Therefore medication use should be carefully considered.

Management in adults

Recommendation 23

Research should be undertaken into lifestyle issues of ADHD such as participation in sport, employment, and eligibility for insurance.

Recommendation 24

Further research should be carried out on the management of adult ADHD.

Interagency collaboration

Recommendation 25

Doctors, educators, other relevant professionals and parents should collaborate to ensure the optimum management of ADHD.

Recommendation 26

Further research is required regarding the impact of ADHD in the education, health, welfare and justice systems.

Appendix 10 - Behaviour Management in Schools Policy (June 1998) Support Document on Attention Deficit Hyperactivity Disorder

Reproduced by courtesy of the Education Department of Western Australia.

Definition

Attention Deficit Hyperactivity Disorder (ADHD) is a condition characterised by three core behaviours: inattentiveness, impulsiveness and over-activity which are at a level inappropriate for the child's expected developmental level. ADHD is a medical term which is given when these core behaviours affect the child's development, behaviour and performance, family relationships or social interaction.

Characteristics of Students Diagnosed with ADHD

Students diagnosed with ADHD may exhibit the following characteristics in the school setting:

- *difficulty sustaining attention to tasks or activities;*
- *difficulty following and obeying rules;*
- *tendency to fidget or move about a lot;*
- *inability to curb immediate reactions or think before acting;*
- *difficulty remembering daily tasks and/or routines;*
- *difficulty organising tasks and activities;*
- *disruptive; and*
- *failure to complete work or follow instructions.*

Diagnosis of ADHD

ADHD is a medical diagnosis made by specialist medical practitioners, usually paediatricians or psychiatrists. The disorder is diagnosed on the basis of a clinical history including information from;

- *parents;*
- *teachers;*
- *a psychologist;*
- *other relevant therapists.*

The Report of the Technical Working Party on Attention Deficit Disorder (1997) recommends that the diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) be widely adopted by professionals involved in the diagnosis of ADHD.

Many conditions have symptoms similar to those of ADHD. The diagnosis of ADHD in children is difficult and evidence should be collated from at least two settings, which in most cases would include the school and home.

Prevalence of ADHD

It is believed that between 3-6% of children are affected by ADHD. The proportion of boys to girls diagnosed with ADHD is approximately 3 to 1. It is considered that girls are underdiagnosed because fewer of them tend to exhibit the hyperactive behaviours common among boys with ADHD.

Until recently, it was believed that ADHD symptoms disappeared in adolescence. It is now known that many symptoms continue into adulthood in about 70% of cases.

ADHD and Behaviour

ADHD is a condition in which hyperactivity can be modified by certain environments, interactions, or situations. In ADHD, inattentiveness and impulsiveness give rise to a range of behaviours considered to be disruptive in classrooms and prejudicial to successful learning.

ADHD and its Effects on School Performance

Students diagnosed with ADHD are at risk of academic underachievement. These learning effects are most marked in situations which are less structured and less active. Since students with ADHD have difficulties in concentrating for lengthy periods, work requiring sustained effort may be often incomplete and result in lower grades.

Students with ADHD may also experience difficulties with social interaction because they are less likely to cooperate with peers, adhere to their responsibilities, follow rules or wait their turn. There will be some students, however, who appear to be listening but are masking their inability to process information and keep their thoughts on track.

The Role of Schools in Supporting Students Diagnosed with ADHD

Schools are responsible for the provision of appropriate educational programs for all students. Students with ADHD have learning needs as diverse as other students in the class. However, students with ADHD learn best when routines exist and instruction and classroom organisation are highly structured and predictable.

ADHD affects the child at home, in school and in the wider community. Some children diagnosed with ADHD exhibit situation specific behaviours. The actions of parents, teachers, and peers can impact on a child's ability to develop responsible behaviour. Positive reinforcement can successfully increase the child's security, trust and the likelihood of appropriate behaviour.

In collaboration with the parent and the student, the school may develop a management plan which may also involve medical practitioners, psychologists, speech pathologists and occupational therapists.

The Role of Classroom Teachers in Supporting Students Diagnosed with ADHD

Strategies that enable the classroom teacher to effectively support students diagnosed with ADHD include:

- *providing a structured classroom environment including classroom movement;*
- *minimising the potential for distraction. For example, ensuring an uncluttered desk;*
- *sitting the student near the front with suitable role model(s) or at the front of the room in a single seat if necessary;*
- *collaborating about learning and behaviour strategies between home and the school;*
- *establishing a collaboratively developed behavioural plan which specifies:*
 - *positive statements;*
 - *frequent feedback on progress;*
 - *clear step-by-step instructions given orally and visually;*
 - *clear explanation of rules and consequences;*
 - *increased frequency of consequences; and*
 - *the use of more relevant and explicit consequences.*
- *developing consistent routines for belongings, work storage, and transition between activities or lessons;*
- *teaching required behaviours;*
- *“breaking” work into small manageable units;*
- *being consistent in instructional approach; and*
- *setting time limits for independent tasks.*

The management of students with ADHD required a collaborative approach between teachers, school administration and parents. It is recommended that teachers seek advice and support from colleagues to assist in the management of students with ADHD. Support outside the school is available from district Student Services Teams.

Administration of Medication

A frequent intervention for children diagnosed with ADHD is the prescription by medical practitioners of stimulant medication (typically Dexamphetamine or Methylphenidate). Some children may need to take medication during school hours and this requirement would need to be included within the child's management plan. The Education Department's Administration of Medication Policy (1997) stipulates that schools are obliged to comply with reasonable requests for assistance in the administration of medication. Based on this policy, each school is required to formulate its own procedures for the administration of medication in a safe and responsible manner.

Requests from Medical Practitioners for School Information

Requests for information from medical practitioners should be answered using the attached form. The Behaviour Rating Scale has been developed in consultation with key educational groups and the College of Paediatricians.

Often students with ADHD have other medical conditions that require further evaluation. In these circumstances, additional information may be sought by medical practitioners but its provision is at the discretion of the Principal. School psychologists may be involved if staff are requested to complete more comprehensive questionnaires such as the Connors Teacher Rating Scale (Revised) or the Achenbach Child Behaviour Check List (Teachers Report).

RESOURCES AND SUPPORT

References

Western Australia, (1996), Report of the Technical Working Party on Attention Deficit Disorder.

American Psychiatric Association, Diagnostic and Statistical Manual of Mental Disorders (1994), 4th ed, Washing DC, American Psychiatric Association.

Education Department of Western Australia (1997), Administration of Medication Policy Procedures, Western Australia.

Education Department Support

Student Services Team. Contact your District Education Office.

Education Department of Western Australia (1996). Students Experiencing Difficulty with Learning: Teacher Resource, Western Australia.

Learning Difficulties and Disability District Service Centre, Learning Difficulties Resource Collection, at Hale House, West Perth.

Parent Support Groups

Learning and Attentional Disorders Society (WA) Inc. (LADS). 29B Owston Street, Mosman Park, 6012 Western Australia. Ph: (08) 9385 1065.

Appendix 11 - Mid West Schools Policy on ADHD

The Mid West School Policy is to be used in conjunction with The Education Department of WA's Policy Support Document on ADHD (Appendix 11). The Midwest Policy was devised through a series of coordinated care meetings, in an effort to tailor the original State document to rural settings.

MID WEST SCHOOL POLICY ON ADHD FOURTH DRAFT

(as revised at Coordinated Care Meeting 3 - 20/11/97)

1. ADHD is a significantly disabling condition
 - ADHD is a recognised disability under the Disability Act of Australia and the American Psychiatric Association DSM IV & ICD 10
 - This school supports all children diagnosed with ADHD
 - Support is in line with the recommendations of the Technical Working Party Draft Report to the WA State Government and the National Health and Medical Research Council Report
 - The government school's response will be in accordance with EDWA policy
2. Specific support will commence when the child has been diagnosed by a qualified medical practitioner. Ideally, this would involve collaboration between teachers, psychologists, doctors and other professionals eg speech therapists, occupational therapists, school nurses.
3. In the best interest of the child a partnership relationship between parents and educational staff is strongly encouraged. Parents will be encouraged to supply to the school information and/or reports from paediatricians, GPs, occupational therapists, speech pathologists, physiotherapists etc.
4. The school psychologist and/or ADHD liaison person will develop an individual management plan which has been collaboratively designed for the student in consultation with relevant professionals or agencies and parents. The Principal will be kept informed at all stages of the process.
5. Management of ADHD is multi-modal and involves all staff.
6. Administration of medication in government schools will be in accordance with current Education Department Medication Policy and Procedures.
7. As part of the school's commitment to ongoing support for students with ADHD, the school will maintain confidential records. The school will transfer each student's ADHD records to the subsequent school when a student leaves this school (including primary to secondary).

FURTHER RECOMMENDATIONS

1. Each school will have at least one ADHD liaison person. The person may be a professional or a parent.
2. Schools are strongly encouraged to access ADHD professional development for staff. Assistance with this will be available from:
 - The Mid West Division of General Practice (MWDGP)
 - Learning and Attentional Disorders Society (LADS), Geraldton and Perth
 - Midwest Training Network (Community Education Centre): training opportunities may be available
 - Town & Country Edu-Bank: ADHD package ("It's Been a Hard Road") available free to schools who apply
 - ADHD resources for professional development (books, tapes and videos) will be available through Geraldton City Library and LADS Perth by mail.

Appendix 12 - Mid West Draft Protocol

MID WEST DRAFT PROTOCOL

(as produced at Coordinated Care Meeting 1 - 12/6/97)

SHARED CARE AND CO-PRESCRIBER ARRANGEMENTS FOR STIMULANT THERAPY

1. Suspected cases of ADD in children will be identified by; GP's, School Nurses; Educational Psychologists; Teachers; Parents; Allied Health Professionals.
2. If not identified by a GP these children will then see a GP of their choice.
3. GP's will then refer if necessary to the visiting specialist Developmental Paediatrician for confirmation of diagnosis. If appropriate, therapy will commence.
4. Co-prescriber Authorisation Form will then be completed by specialist Paediatrician.
5. If stimulant therapy is prescribed, a co-prescriber arrangement between specialist and GP will commence. GP will review in two weeks.
6. The GP will then be responsible for regular follow up on a three monthly basis.
7. GPs to send 6 monthly reports to the supervising paediatrician by fax or letter.
8. It is recommended that a reminder system be used for follow-up visits.
9. Follow up with the specialist Paediatrician will usually be on a 12 monthly basis.

Appendix 13 - ADHD SUMMARY HANDOUT

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L.A.D.S.
Learning and Attentional Disorders Society of WA
29B Owston St
Mosman Park WA 6012
Telephone (08) 9385 1065 Fax (08) 9385 5965

ATTENTION DEFICIT DISORDER

Definition

- Attention deficit disorder is misunderstood by many.
- It is not a behaviour problem, but a behavioral expression of a problem defined in different ways.
- It is a neurobiological disorder or imbalance.



Incidence Rate

The incidence rate is not clear because of a lack of clear and accurate data. Depending on the source of information, the disorder affects between 5 – 20% of the childhood population.

ADD is more common in boys than girls. Recent studies suggest girls are under identified because they exhibit fewer aggressive, hyperactive characteristics and don't come to the teacher's attention.

Types of ADD

With hyperactivity

- Fidgety
- Moves all the time
- Has poor sleep patterns
- Is overactive
- Has spotty memory
- Memory filled with short circuits
- Impulsive
- Unsociable
- Poor listening
- Can't put information together
- Often breaks things
- Irritability; explosive; doesn't like confinement
- Insatiable; clamors for attention
- Interruptive
- Attention switches to another topic quickly



Without hyperactivity

- Is mostly hypoactive
- Quiet child
- Often sits for a long time without movement
- Mind tends to drift off; memory goes blank
- Poor listening, but doesn't interrupt
- Doesn't hear instructions
- Knowledge is erratic and predictable
- Appears lazy and unmotivated
- Forgetful
- Poorly coordinated eye movements
- May fiddle
- Can be disorganised physically or mentally
- Can't remember time



Please note



Any child with an attentional disorder may have a range of symptoms and the patterns of symptoms may differ quite widely. For example, the child may be quite bright, concentrate well on favourite activities but be unaccountably impulsive and erratic and unable to achieve to their level of potential. The child might seem able to achieve adequately but not to be motivated to finish things. They can be restless and distractible.

There is no 'typical' child. In some situations, for a period of time, the child may be quite settled and function very well. What is certain about ADD is that underlying inconsistency in attention may affect the child's adjustment, the full expression of potential and ultimately the self esteem.

Do children outgrow the disorder?



It was assumed that from about the age of 14 (puberty) children grew out of ADD. It was thought that the nervous system matured resulting in improved neurotransmitter release. However, the most recent evidence shows that ADD may be a 'life disorder' with many children learning to have more control over their problems during teen years.

For about 50 – 70 % of children with ADD some of the problems will continue into adulthood. Early identification, treatment and support will help considerably to alleviate these problems.

How does it happen?

The following is a widely accepted view of the basic mechanism of ADD.



In children who have ADD, there appears to be an immaturity of the brain chemistry in the affected area of the brain ie to do with the reticular activating system involved with concentration and attentional processes.

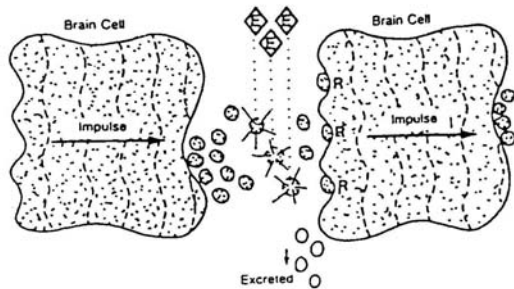
A brain cell is very similar in structure to a car battery. It consists of a chemical fluid (neurotransmitter) within a cell. An incoming message will stimulate the release of the neurotransmitter substances into the space between the two brain cells. This transmitter fluid then travels to the next cell where it attaches itself to the outer membrane of the cell and stimulates it.

The messages are passed on from one cell to another in this way. Enzymes between two cells control the amount of neurotransmitter and if too much is released then the excess is destroyed. If not all used the neurotransmitter is broken down and excreted through urine.

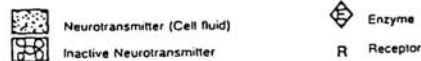
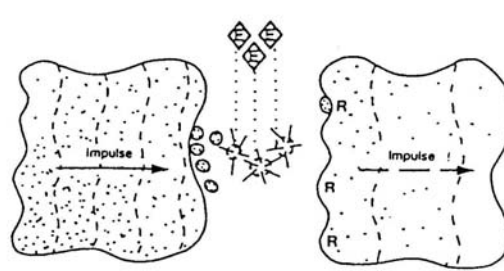
In children who have ADD, insufficient neurotransmitter is manufactured, resulting in diminished transfer of messages between cells.

In addition, the enzymes in these children may be too efficient and may destroy the neurotransmission of messages between cells in the affected area.

Transmission of Messages – Normally



In Children with ADD

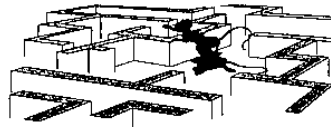


(brain cells in affected area)

Methods of Intervention

In the management of children with ADD consideration has to be given to the levels of development and emotional maturity. Primary areas to be covered are academic learning and social behaviour. Usual methods of intervention are:

- Behaviour therapy
- Remedial teaching
- Speech and language therapy
- Occupational therapy
- Dietary control
- Medication



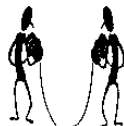
We aim for a composite improvement in the child's development and self esteem by involving some or all of these methods.

Management of Children with ADD

An essential component of the management of children with ADD at home or school is the underlying structure and consistency of handling. Imposition of discipline without careful planning of the child's environment is not an effective method of control. The following ideas are a useful guide.

1 Helping

- List and number things
- Guide child, avoid nagging
- Establish clear tasks
- Generalise rather than accuse



3 Listening Skills

- Establish eye contact
- Touch if necessary
- Get child to repeat what was said
- Write instructions



2

Instructions

- Give instructions one at a time
- Slowly build up to multiple instructions
- Don't yell

4 Seating Instructions

- Don't have too many concrete things around
- Keep work area free of distractions
- Organise groups carefully (try not to put two children with ADD together)
- Keep child towards the front of the room

The use of Medication

Treatment with drug therapy is at once the most controversial and also the most successful form of management for children and adults with attentional problems. Ritalin (Methylphenidate) is very similar to the chemical composition of the natural neurotransmitter.

- Ritalin increases the level of neurotransmitter substance in the gap between the two nerve cells, acting as a neurotransmitter. It is eliminated from the system within 4 hours and is not addictive.
- Dexamphetamine is also used but is eliminated after 6 to 8 hours. It is not addictive.

All but a small percentage of children and adults with ADD respond to medication. Side effects that might be observed in a few cases are; slight suppression of appetite, tendency to weepiness when the medication has worn off, or a headache. These effects are rarely observed and generally disappear after a short time.

'When one has improved the internal environment of the child's brain, the child responds more appropriately to the other therapies that are working at improving his external environment.' (Dr Serfontein)

LADS Perth Office can help you with counselling and advice about treatments, Ph: 08 9385 1065.

GERALDTON CITY LIBRARY RESOURCES LADS COLLECTION

BOOKS

<u>Title</u>	<u>Author</u>
Teaching Your Child the Language of Social Success	<i>DUKE, M P and others</i>
Good Friends Are Hard to Find	<i>FRANKEL, Fred</i>
ADD in the Workplace	<i>NADEAU, Kathleen</i>
Finding a Career That Works for You	<i>FELLMAN, Wilma</i>
Hidden Handicap (The)	<i>SERFORNTEIN, Gordon Dr</i>
Study Strategies	<i>DAVIS, Leslie and others</i>
Brain Lateralisation and Reading Problems	<i>PREEN, B / TOWNSEND, D</i>
Dyslexia	<i>TOWNSEND, D / PREEN, B</i>
Smart Moves: Why Learning is Not All in Your Head	<i>HANNAFORD, Carla</i>
Children and Adults with ADD	
ADD Quick Tips	<i>CRUTSINGER, C / MOORE, D</i>
I Would If I Could	<i>GORDON, Michael PhD</i>
Answers to Distraction	<i>HALLOWELL, Edwara J</i>
Beyond ADD	<i>HARTMAN, Thom</i>
Healing ADD	<i>HARTMAN, Thom</i>
ADD Success Stories	<i>HARTMAN, Thom</i>
ADD in Adults	<i>SERFORNTEIN, Gordon Dr</i>
Women ADD	<i>SOLDEN, Sali</i>
Adult ADD	<i>WHITEMAN, Thomas A</i>
Honey Are You Listening	<i>FOWLER, Rick</i>
	<i>FOWLER, Jerilyn</i>
ADD A Different Perception.....	<i>HARTMAN, Thomas</i>
Overload – ADD	<i>MILLER, DK / BLUM, K</i>
Taking Charge of ADHD	<i>BARKLEY, Russell</i>
Understanding ADD	<i>GREEN, Christopher</i>
Parents Guide to ADD	<i>MCCARNEY, SB / BAUER, AM</i>
Your Child Needs a Champion	<i>MILLER, Jane</i>
Kids, Families and Chaos	<i>NASH , Harry Dr</i>
Talk, Time Teamwork 1	<i>NSW Dept of School Educ</i>
Time, Talk Teamwork	<i>NSW Dept of School Educ</i>
ADD Hyperactivity Workbook	<i>PARKER, Harvey C PhD</i>
ADD/ADHD A Checklist	<i>RIEF, Sandra</i>
You and Your ADD Child	<i>WALLACE, Ian</i>
Voices From Fatherhood	<i>KILCARR, P / QUINN, P O</i>
Putting on the Brakes	<i>QUINN, Patricia O. MD</i>
	<i>STERN, Judith M. MD</i>
Surviving Your Adolescents	<i>PHELAN, Thomas W. PhD</i>
The Answer is NO	<i>WHITHAM, Cynthia</i>
Winning the Whining War	<i>WHITHAM, Cynthia</i>
ADD On The Job	<i>WEISS, Lynn</i>
What does everybody else know that I don't.....	<i>NOVOTNI, Michelle, PETERSEN, Randy</i>

BOOKS

Title

Author

JUNIOR

How To Do Your Homework	ROMAIN, Trevor
Get Back to Work!	GORDON, Michael PhD
My Brother's a World Class Pain	GORDON, Michael PhD
Making the Grade	PARKER, Roberta N.
Slam Dunk	PARKER, Roberta N.
Otto Learns About his Medicine	GALVIN, Matthew MD
Don't Give Up Kid (The)	GEHRET, Jeanne MA
I'm Somebody Too	GEHRET, Jeanne MA

VIDEOS

Children With Disabilities	GREEN, Christopher Dr
Volume 6 - TODDLER TAMING	
Attention Deficit Disorder	EMA Limited
How Difficult Can This Be? (Video + Booklet)	LAVOIE, Richard D
Understanding ADD	GREEN, Christopher Dr
When The Chips Are Down (Video + Booklet)	LAVOIE, Richard D
Welcome To Toddlerhood – Vol 1 TODDLER TAMING	GREEN, Christopher Dr
Beyond Toddlerdome	GREEN, Christopher Dr
Growing Up – Vol 4 TODDLER TAMING	GREEN, Christopher Dr
Good Working Parents (The) – Vol 5 TODDLER TAMING	GREEN, Christopher Dr
Solving Sleep and Food Problems – Vol 3 TODDLER TAMING	GREEN, Christopher Dr
Discipline – Vol 2 TODDLER TAMING	GREEN, Christopher Dr
1-2-3 Magic	PHELAN, Thomas W. PhD

CASSETTES

Driven to Distraction (2 cassettes)	HALLOWELL, Edward MD
You Mean I'm Not Lazy, Stupid or Crazy?! (2 cassettes)	KELLY, Kate
	RAMUNDO, Peggy
Women With ADD	SOLDEN, Sali

USEFUL WEBSITES

For U.S. Federal Department of Health And Education Position Statements:

www.nimh.nih.gov/publicat/adhd.cfm

U S A CHADD Support Groups

www.chadd.org/

Mid West Division of General Practice

www.midwestdgp.com.au - follow prompts to ADHD Manual (under Programs tab/Mental Health)

Appendix 14 - Attention Deficit Disorder – Predominantly Inattentive Type

The following article is an adaptation of a CHADD (Children and Adults with Attention Deficit Disorders) fact sheet, which appeared in the LADS No 17 July 1996 edition of the Ladder Newsletter.

Reproduced by courtesy of LADS, Perth.

At last an official fact sheet from C.H.A.D.D. for the many people who ask for more information on the dreamy child who is not always obvious in a classroom, and the passive adolescent or adult who cannot sustain concentration.

ADD “Without” Hyperactivity

Contrary to widespread belief, not all individuals who have an attention deficit disorder (ADD) are hyperactive and impulsive. Some children, adolescents, and adults lack the impulsive-hyperactive problems that have long been considered essential characteristics of ADD. However, they still have long term, serious problems with paying attention; getting started on tasks; organising for tasks; keeping track of belongings; remembering what they were planning to do; ignoring distractions; finishing tasks; and other problems associated with ADD.

Attention Deficit Hyperactivity Disorder, predominantly inattentive type includes those people who show significant problems of inattention, but not much difficulty with impulsivity or hyperactivity.

Attention Deficit Hyperactivity Disorder, predominantly hyperactive/ impulsive type includes people who show significant problems with hyperactivity and impulsivity, but only some difficulty with inattention.

Attention Deficit Hyperactivity Disorder, combined type includes those people who show significant problems with inattention and hyperactivity and impulsivity.

All of the above types of ADD can present serious problems for people in school, work, family, and social relationships.

More about the Predominantly Inattentive Type of ADD

The Diagnostic and Statistical Manual of the American Psychiatric Assn, DSM IV (1994) provides criteria to be used by clinicians in determining whether a person may have the predominantly inattentive type of ADD. These include:-

1. Often fails to give close attention to details or makes careless mistakes in schoolwork, work or other activities.
2. Often has difficulty sustaining attention in tasks or play activities.
3. Often does not seem to listen when spoken to directly.
4. Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behaviour or failure to understand instructions).
5. Often has difficulty organising tasks and activities.
6. Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or home work).

7. Often loses things necessary for tasks or activities, (eg toys, school assignments, pencils, books or tools).
8. Is often easily distracted by extraneous stimuli.
9. Is often forgetful in daily activities.

To be diagnosed as having predominantly inattentive type of ADD a child or adult must exhibit at least six of the above symptoms for at least six months. In addition, these symptoms must be to a greater degree than what is normally found in people of the same age. Furthermore, these symptoms must seriously impair functioning in more than one setting, eg home and school or work. The individual must also have had at least some of these symptoms since before the age of seven. Note that no hyperactive or impulsive symptoms are required for a diagnosis of predominantly inattentive type of ADD.

No Longer “ADD With or ADD Without Hyperactivity”

As discussed above, the diagnosis for individuals not exhibiting hyperactivity is Attention-deficit/Hyperactivity Disorder, predominantly inattentive type – not “ADD Without Hyperactivity”

Individuals who fit these diagnostic criteria may still exhibit hyperactivity or impulsivity, just not enough to qualify as Attention-deficit/Hyperactivity Disorder, combined type. Likewise, those individuals with Attention deficit/Hyperactivity Disorder predominantly hyperactive-impulsive type may be inattentive in addition to hyperactive and impulsive.

Although the following symptoms may also be found in individuals who have hyperactive-impulsive type of ADD, they are often significant problems of those who have predominantly inattentive type of ADD.

Difficulties in Getting Started

One of the greatest problems for many individuals who are diagnosed with the predominantly inattentive type of ADD is long term difficulty in getting started on activities that require sustained mental effort (concentration/focusing attention).

Children and adolescents often find it difficult to get started on class work in school or homework. Teachers sometimes describe them as day-dreamers, “space cadets”, or “couch potatoes”. They often require assistance in planning and starting class work and homework assignments and long term projects.

Adults with the predominantly inattentive type of ADD say they often procrastinate on tasks at home and at work. Even those tasks that they recognise as important to their own welfare tend to be put off. They may avoid tasks that require them to put forth mental effort for long periods of time. Important tasks are often ignored or not even begun until an imminent deadline elicits frantic eleventh-hour efforts.

Difficulties in Sustaining Alertness and Effort

Another serious challenge for many individuals with this type of ADD is sustaining the attention, energy and effort needed to complete tasks. Some complain of becoming easily bored; others report that they tire quickly or become drowsy (even during the day and after they have a good night’s sleep). Children may often appear “spacey”, frequently daydreaming or looking sleepy in class; adolescents or adults may report difficulty in fighting off drowsiness while studying, driving, listening to lectures or attending meetings. As a result, the achievement of many individuals with Attention-deficit/Hyperactivity Disorder, predominantly inattentive type, is often very inconsistent. For example, a student’s grades may consistently and widely vacillate from very high to very low.

Additionally, these individuals may be unable to complete many of the chores, assignments, or projects that they started with enthusiasm.

Difficulties with Short Term Memory

Although individuals with predominantly inattentive type of ADD may have long-term memory skills that are more than adequate, many report chronic difficulties with short-term memory. Often they are forgetful and lose track of what they had planned to say or to do. They frequently forget where they have put things or what they have just read or heard, especially if they are trying to keep one thing in mind while doing something else.

Inconsistent Symptoms

Because symptoms in individuals with Attention-deficit/Hyperactivity Disorder, predominantly inattentive type, are displayed inconsistently, this must be taken into account when drawing conclusions during assessment. Fortunately, most people with this type of ADD have some activities in which they sustain attention and effort very well; these activities are usually ones which are novel or which they enjoy doing and, therefore, are extremely interesting. These may include playing sports, using computers, painting or drawing, music, or playing video games. Yet, these same individuals may not be able to sustain attention long enough to complete routine tasks, even when they are aware of the importance of doing so.

Identifying Individuals with Attention Deficit Hyperactivity Disorder, predominantly inattentive type

A comprehensive assessment is necessary to accurately identify individuals with predominantly inattentive type of ADD. Data collected during the assessment process should be compared to the diagnostic criteria set forth in the DSM IV.

The assessment process involves collecting information from several sources and through a variety of procedures. Medical doctors, mental health professionals, educators and family members, as well as the child or adult suspected of having ADD, are usually all involved in the assessment. For children and adolescents, school information, parent reports, medical findings, and performance on different psychometric tests and rating scales often provide useful data to help professionals arrive at a diagnosis. Similarly, for adults, information on different psychometric tests and rating scales can also provide useful data. Unfortunately, most behaviour rating scales currently used to help with diagnosis are more sensitive to problems associated with hyperactivity and impulsivity than they are to problems of inattention.

It is also important to consider additional problems that people with predominantly inattentive type of ADD sometimes have. It is equally as important for the clinician to consider other possible causes which could create symptoms that may be mistaken for ADD. Emotional difficulties such as excessive anxiety or depression can result in tiredness, low energy, poor concentration and inattention. Certain medical conditions may produce these symptoms as well. Clinicians should always consider whether the symptoms are due to ADD or another disorder altogether, or whether ADD is existing in combination with other disorders (eg depression).

Treatment of Individuals with Attention Deficit Hyperactivity Disorder, predominantly inattentive type

To be effective, treatment must be individualised. Multi-modal treatments involving counselling, education and when necessary, medication, work best for individuals with inattentive type of ADD.

Initially, helping the person with ADD and his or her family to understand the nature of the disorder can help immensely. There are a wide assortment of books and videos on the topic of attention deficit disorder, although less information has been published about this type of ADD than has been published about the hyperactive-impulsive type of ADD.

Greater awareness about this type of ADD may lead to earlier recognition and more effective treatment of individuals with predominantly inattentive type of ADD.

Medications such as methylphenidate, dextroamphetamine, and pemoline usually improve symptoms found in those with predominantly inattentive type of ADD. Some anti-depressants can also be helpful in the treatment of this type of ADD. Decision about the role of medication in treatment must be determined in consultation with a physician.

Accommodations in school and at work

Often, students need some accommodations in the classroom to succeed. Adults with this type of ADD may benefit from accommodations in the workplace, as well.

Classroom accommodations may include:

- extended time and/or private room for examinations;
- computers and word processing for written work and personal organisation;
- permission to tape record lectures; and
- increased communication between home and school.

Workplace accommodations may include:

- increased communication with supervisors;
- common work-space dividers;
- devices to address distracting background noise; and
- devices or procedures to assist with organisation, ie colour-coding, filing, etc.

Conclusion

It is estimated that three to five percent of school age children have ADD of one type or another. How many people have Attention-deficit/Hyperactivity Disorder, predominantly inattentive type is less clear – perhaps as many as one-third of all individuals with ADD.

Hyperactive and impulsive behaviour is easy to spot. Thus, people with Attention-deficit/Hyperactivity Disorder, predominantly hyperactive-impulsive type and Attention Deficit Disorder, combined type are more readily identified and properly diagnosed. People who are quiet and inattentive are easily over-looked. Therefore, a significant number of people who have this type of ADD are not identified until they reach upper-elementary or secondary school grades or adulthood, if at all.

Appendix 15 – Next Project – Early Detection in Rural and Remote Communities

Midwest Division of General Practice Youth Mental Health Program Early Detection Project in Rural and Remote Communities

To assist the GPs of the Midwest Division of General Practice with the early identification of child and adolescent disorders in isolated and disadvantaged groups (ie RRMA, 7,6,5,4 in that order and the lower socio-economic class).

This target population clearly does not have sufficient access to mental health resources and psychometric assessment with the result that a significant number of learning difficulties and disorders such as ADHD go undiagnosed. Early assessment of these “soft” mental health problems would help reduce the incidence of criminality and substance abuse, improving the educational and social performance level in this age group.

The target population will be lower primary school plus children from 0 – 6 years of age. Locations identified for this purpose are as follows:

Exmouth – Onslow	Carnarvon	Denham	Murchison
Three Springs	Mullewa	Irwin	Perenjori
Morawa	Mingenew		

A local health professional will then access the said target population through GP surgeries, Day Care Centres, Pre-Primary and Primary Schools, Play Groups, EDWA Regional Officers, Community Health Sisters, Aboriginal Health Workers, Mental Health and other visiting teams. Those who are identified by these centres as being at risk will then be offered assessment. This may include CADSI and /or other pre-diagnostic screening instruments as required.

CADSI consists of three separate screening forms: the self report form, parent form and teacher report form. Each form comprises screening criteria bases on DSM4 which is the most widely used diagnostic manual in the world. Completion of each form takes approximately 20 minutes and can be administered to patients in an individual or group setting. The forms are then processed by Psychological and Educational Consultancy Services with the ensuing report being sent to the client and any other parties involved within seven days.

The assessments will be conducted by the health professional who will receive the necessary induction from Dr Pedlow. There will also be a regional training event for these professionals and their supervising GP's. The purpose of these assessments is to identify early signs of learning difficulties or possible mental health problems for subsequent diagnosis by the GP and, where necessary, referral to a mental health professional. Where this seems appropriate to the GP, arrangements will be made either for a visiting service to be provided or, failing that, for the patient to be transported to a treatment centre that would involve the minimum cost/inconvenience. (PATS) The team that has already been developed as part of the ADHD Shared Care Model – including developmental paediatrician Dr Ken Whiting, child psychiatrist Professor Bob Kosky and educational psychologist Ms Kim Weatherston – will provide the starting point for this referral network.

Performance indicators to be used for this Project include the following:

- The number of communities involved
- The number of diagnosed conditions and co-morbidities present
- The quality of liaison between GPs and mental health professionals (Using the Memorandum of Understanding which is currently being developed by CUCRH as the “before” situation pertaining to this liaison quality, a follow-up survey would be conducted to determine the “after” picture).

Disclaimer

The clinical procedures described and recommended in this manual are based on research and consultation with nursing, medical, pharmaceutical and legal authorities. To the best of our knowledge, these procedures reflect currently accepted practice; nevertheless, they can't be considered absolute and universal recommendations. For the patient's clinical condition before the administration of new or infrequently used drugs. The authors and publisher disclaim responsibility for adverse affects resulting directly or indirectly from the suggested procedures, from undetected errors, or from the reader's misunderstanding of the text.

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