Management of ADHD in Primary care settings

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Goals of this talk

- Review of diagnostic criteria
- Screening, and Diagnostic formulation in a GP practice
- Uses / limitations of questionnaires
- List of common co-morbidities and differential diagnoses of ADHD
- Non – Pharmacological Management of ADHD – in primary care
- Talk based on personal experience

Excluded in next 30 minutes

- Medication management – next talk
- Theoretical aspects of ADHD, putative biology, current research in ADHD
- Differences between US, UK/Canada versus Australian models of care (also excludes differences between Inner Brisbane versus rest of SEQLD models of care)
- Lack of resources / difficulties accessing expert help in a timely manner
- Michael Phelp's 8 gold medals in spite of ADHD!!

WHY Talk about ADHD: Cost ADHD in Children (US data)

- Annual cost ADHD in children $14,600 per individual in 2005 US $
  - 18% health care
  - 34% education
  - 48% crime and delinquency
- 42.5 billion/year
  - Comparable to asthma2
- Increased risk ER visits, co morbidity, accidents

Indirects costs not accounted for things such as increased smoking, drug abuse, foster care, victims of crimes by ADHD sufferer etc etc

Pelham W 2007; Chan 2002; Leibson 2001, Swensen 2003

Summary of US Cost Data

- Total costs of **adult** ADHD 31.6 billion year 2000 US$[2]
- Total costs childhood ADHD 42.5 billion
- Total 74.1 billion
- + Loss of work productivity in adults $77 billion
- Total **cost of treatment** 1.6 billion or **5%**[2]

1. Kelleher, 2000; 2. Pelham 2007 3 Birnbaum, 2005 4 Biederman, 2007

MG an 11 year old boy

- Multitude of behavioural concerns –
- Frequently in trouble at school for two years
- Mother came to you because she feels overwhelmed by his anger outbursts at home
- Mother worried that his behaviours could threaten her marriage with new partner and worries about her 4-year-old's safety
- Shared care arrangements – mostly spends time with biological mother
- Reduced number of contacts with father for last one year
- Hard to get him to get organised for school in mornings

MG an 11 year old boy

- On this 3rd week long suspension this year
- Apparently did well in Mathematics until 2 years ago – Now mostly “D” s
- Truancy
- Mother no longer able to get him to do homework
- Needed reading recovery program in year 1 and 2
- Good rugby player

ADHD Overview (A true entity!! Beyond any debate)

A neurodevelopmental disorder

- ***– Developmentally inappropriate*** levels of hyperactivity, impulsivity, and inattention
- – **Impairment in executive function** and behavioural self-regulation
- 60 % will have some ADHD symptoms beyond adolescence
- Boys: Girls 4: 1 to 9: 1
- Girls – inattentive type more common

Diagnosis

- Australia: DSM -4 – need to fulfil 5 sets of criteria (criteria 1 – contains symptom lists)
- ICD -10 (WHO maintained) used mainly in Europe ?
- Symptom list is similar apart from couple of differences
- Symptoms divided into three domains: Inattention, Hyperactivity and impulsivity

Diagnosis ADHD / HKD

- DSM – 4 - ADHD
- Symptoms from one domain adequate
- Three subtypes
- Conduct disorder separate diagnosis
- Allows for ADHD diagnosis with anxiety / depression

- ICD – 10 – HKD
- Requires symptoms from all three domains
- Equates to severe
- Subdivides based on conduct problems
- HKD not recommended when internalising disorder present

DSM-4 – Criteria 1 either A / B

A) Six or more of the following symptoms of inattention have been present for at least 6 months to a point that is inappropriate for developmental level:

Inattention (the day-dreamer)

- Often does not give close attention to details or makes careless mistakes in schoolwork, work, or other activities.
- Often has trouble keeping attention on tasks or play activities.
- Often does not seem to listen when spoken to directly.
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (**not due to oppositional behavior or failure to understand instructions**).
- Often has trouble organizing activities.
- Often avoids, dislikes, or doesn't want to **do things that take a lot of mental effort for a long period of time (such as schoolwork or** homework).
- Often loses things needed for tasks and activities (e.g. toys, school assignments, pencils, books, or tools).
- Is often easily distracted.
- Is often forgetful in daily activities.

Paradoxically fewer referral / later referrals – underachiever but not behavioural problems

DSM-4 – Criteria 1 either A / B

B) 6 of 9 for past 6 months

Hyperactivity (the fidgeter)

- Often fidgets with hands or feet or squirms in seat when sitting still is expected.
- Often gets up from seat when remaining in seat is expected.
- Often excessively runs about or climbs when and where it is not appropriate (adolescents or adults may feel very restless).
- Often has trouble playing or doing leisure activities quietly.
- Is often "on the go" or often acts as if "driven by a motor".
- Often talks excessively.

Impulsivity (Denise the menace)

- Often blurts out answers before questions have been finished.
- Often has trouble waiting one's turn.
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

ADHD Diagnosis – criteria 2, 3, 4 & 5

- 2) *Impairing* symptoms present before age 7
- 3) more than two settings
- 4) *clear evidence* of clinically significant impairment in social, academic, or occupational functioning **
- 5) 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 (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder)

DSM5: Main Changes: ADHD Criteria

Children must have at least six symptoms from either (or both) the inattention group of criteria and the hyperactivity and impulsivity criteria, while older adolescents and adults (over age 17 years) must present with five. While the criteria have not changed from DSM-IV, examples have been included to illustrate the types of behavior children, older adolescents, and adults with ADHD might exhibit. The descriptions will help clinicians better identify typical ADHD symptoms at each stage of patients' lives. Using DSM-5, several of the individual's ADHD symptoms must be present prior to age 12 years, compared to 7 years as the age of onset in DSM-IV. This change is supported by substantial research published since 1994 that found no clinical differences between children identified by 7 years versus later in terms of course, severity, outcome, or treatment response.

DSM-5 includes no exclusion criteria for people with autism spectrum disorder, since symptoms of both disorders co-occur. However, ADHD symptoms must not occur exclusively during the course of schizophrenia or another psychotic disorder and must not be better explained by another mental disorder, such as a depressive or bipolar disorder, anxiety disorder, dissociative disorder, personality disorder, or substance intoxication or withdrawal.

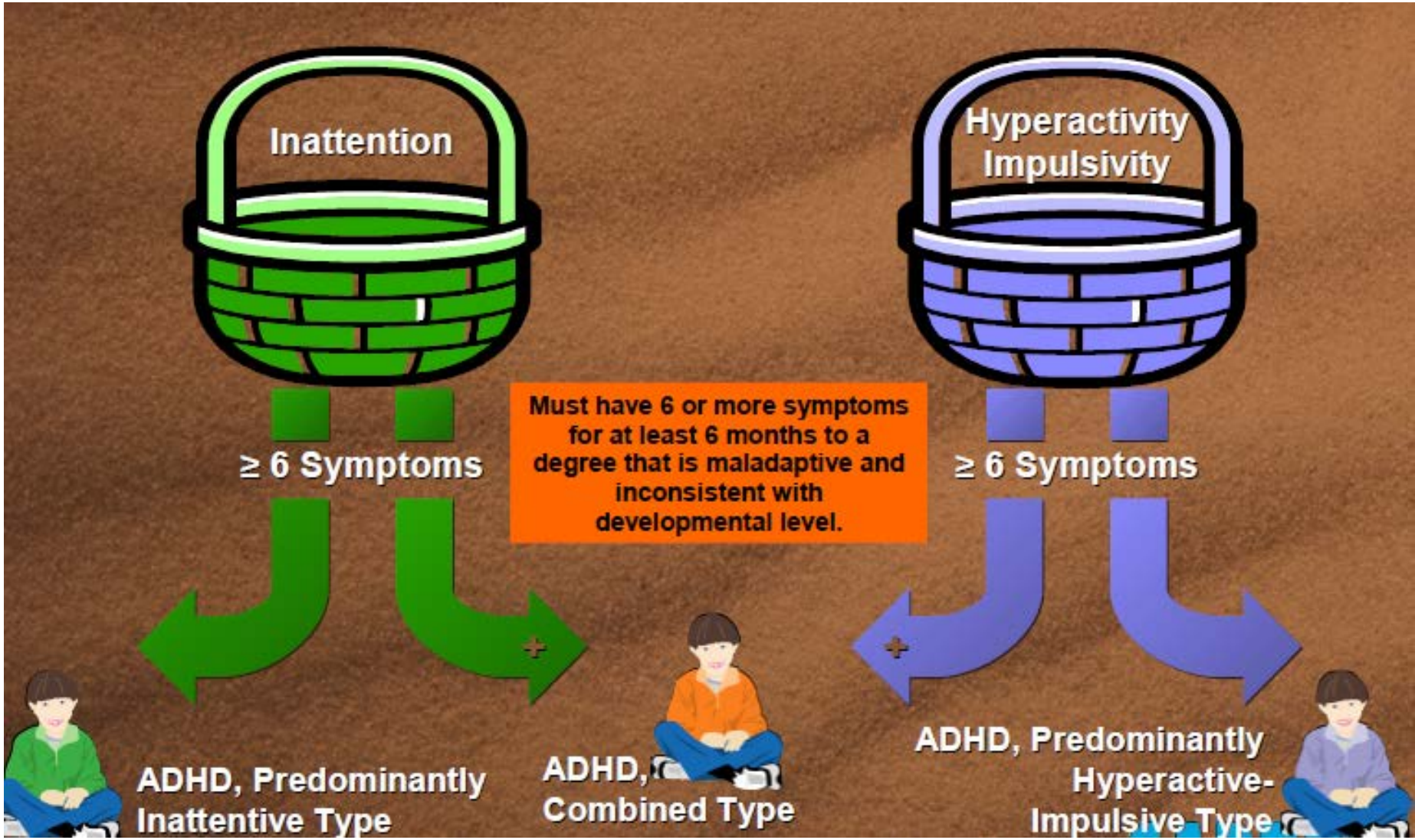
from studies in which individuals were tracked for years or even decades after their initial childhood diagnosis. The results showed that ADHD does not fade at a specific age.

Studies also showed that the DSM-IV criteria worked as well for adults as they did for children but that a lower threshold of symptoms (five instead of six) was sufficient for a reliable diagnosis.

ADHD

- Gold standard for diagnosis – Expert opinion
  - (In US) child psychiatrist, paediatrician or a psychologist trained and expert in making these diagnoses
- Easy to keep a print out of DSM-4 criteria
- At times difficult to decide “maladaptive” “functional impairment” “appropriate to developmental / cognitive level”
- Screening (wide range of symptoms) questionnaires better for gathering information

ADHD Overview



MG 11 year old in my GP Surgery : what can I offer? Suggested approach

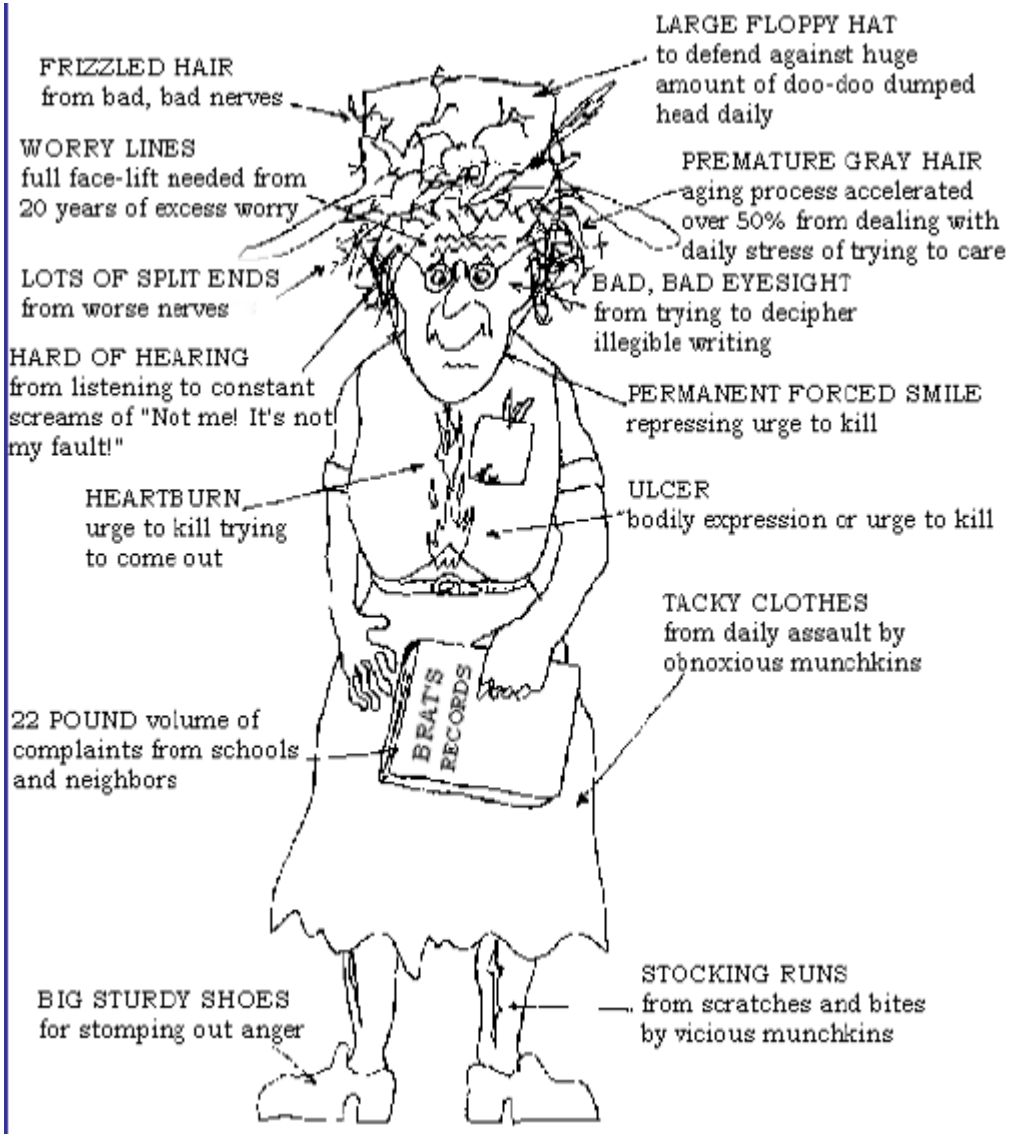
- Outline your role as GP / what to expect in next 10 minutes
- Clarify you need to gather info systematically in order to move forward
- Successfully / politely interrupt the “verbal Diarrhoea”
- Must spend 3 - 4 minutes with the child
- Scan school reports; beware of the language
- Follow up with a long consult
- When referring – clarify – for opinion rather than for obtaining a specific diagnosis

Assessment – 1)Interview

- **Interview** with the child and the parents or carers to gather information about:
  - Presenting difficulties; somes nesessary to probe deeper
  - Family and social history;
  - Child's developmental history;
  - Child's medical history;
  - Anxiety levels and self-esteem of the child;
  - The wider systems such as educational progress and social services involvement.
- Speed with which one can surmise key aspects of a particular child develops over a period

Difficult to get all history – any tricks?

Portrait of a care giver to a child with ADHD



Assessment: 2)Information Gathering

- Parents and teachers should be asked to complete a rating scale (questionnaire)
- Easier to get Questionnaires supplied by school's Guidance officer.
- Ask for the photocopy of filled Q in addition to summary report.
- Short versions versus long versions of any Q
- ADHD ***Specific*** scales – usually shorter – more useful if filled by school
- Instead of IQ tests – school reports – more readily available

MG in my GP Rooms

- Questionnaires - free online ones – SNAP-4, Vanderbilt, CADDRA
- Guidance officer (only report sent) – usually Connor's long Version
- I prefer Achenbach's Q – three forms
- Parents /caregiver forms (CBCL), Teacher report (TRF), and YSR – Youth self report (>11)
- TRF more useful as a third party observation rather than CBCL (parent forms)
- Whilst reading all questionnaires – quick glance at symptoms ticked "often" or "always"
- Questionnaires may have different scale – eg 1 to 5 instead of 0, 1, 2 in Achenbach's

D4 NICHQ Vanderbilt Assessment Scale—TEACHER Informant

Teacher's Name: _____ Class Time: _____ Class Name/Period: _____

Today's Date: _____ Child's Name: _____ Grade Level: _____

Directions: **Each rating should be considered in the context of what is appropriate for the age of the child you are rating and should reflect that child's behavior since the beginning of the school year. Please indicate the number of weeks or months you have been able to evaluate the behaviors: _____.**

Is this evaluation based on a time when the child ☐ **was on medication** ☐ **was not on medication** ☐ **not sure?**

Symptoms	Never	Occasionally	Often	Very Often
1. Fails to give attention to details or makes careless mistakes in schoolwork	0	1	2	3
2. Has difficulty sustaining attention to tasks or activities	0	1	2	3
3. Does not seem to listen when spoken to directly	0	1	2	3
4. Does not follow through on instructions and fails to finish schoolwork (not due to oppositional behavior or failure to understand)	0	1	2	3
5. Has difficulty organizing tasks and activities	0	1	2	3
6. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort	0	1	2	3
7. Loses things necessary for tasks or activities (school assignments, pencils, or books)	0	1	2	3
8. Is easily distracted by extraneous stimuli	0	1	2	3
9. Is forgetful in daily activities	0	1	2	3
10. Fidgets with hands or feet or squirms in seat	0	1	2	3
11. Leaves seat in classroom or in other situations in which remaining seated is expected	0	1	2	3
12. Runs about or climbs excessively in situations in which remaining seated is expected	0	1	2	3

myADHD.com
SNAP-IV-C Rating Scale # 6160
James M. Swanson, Ph.D., University of California

Child's name:_____ Age:_____ Grade: _____ Gender: _____

Completed by: _____ Date: _____

For each item, select the box that best describes this child. Put only one selection per item.

		Not at All (0)	Just a Little (1)	Quite A Bit (2)	Very Much (3)
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	☐	☐	☐	☐
5.	Often has difficulty organizing tasks and activities	☐	☐	☐	☐
6.	Often avoids, dislikes, or is reluctant to engage in tasks that require sustained men tal effort (e.g., schoolwork or homework)	☐	☐	☐	☐
7.	Often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)	☐	☐	☐	☐
8.	Often is distracted by extraneous stimuli	☐	☐	☐	☐
9.	Often is forgetful in daily activities	☐	☐	☐	☐
10.	Often fidgets with hands or feet or squirms in seat	☐	☐	☐	☐
11.	Often leaves seat in classroom or in other situations in which remaining seated is expected	☐	☐	☐	☐
12.	Often runs about or climbs excessively in situations in which remaining seated is expected	☐	☐	☐	☐
13.	Often has difficulty playing or engaging in leisure activities quietly	☐	☐	☐	☐
14.	Often is "on the go" or often acts as if "driven by a motor"	☐	☐	☐	☐
15.	Often talks excessively	☐	☐	☐	☐
16.	Often blurts out answers before questions have been completed	☐	☐	☐	☐
17.	Often has difficulty awaiting turn	☐	☐	☐	☐
18.	Often interrupts or intrudes on others (e.g., butts into conversations/games)	☐	☐	☐	☐
		Sum of Items for Each Scale	Average Rating Per Item = Sum/9	Teacher 5% Cutoff	Parent 5% Cutoff
	Average score for ADHD-Inattention (sum of items 1-9/ # of items)			2.56	1.78
	Average score for ADHD-Hyperactivity-Impulsivity (sum of items 10-18/ # of items)			1.78	1.44
	Average score for ADHD-Combined (sum of items 1-18/ # of items)			2.00	1.67

CADDRA
CANADIAN ADHD RESOURCE ALLIANCE

Patient Name:
Date of Birth: MRN/File No:
Physician Name: Date:

CADDRA PATIENT ADHD MEDICATION FORM

Please complete and bring to your next appointment

Patient name: _____ Date form is completed: _____

Person completing this form (if not the patient): _____ ☐ Mother ☐ Father ☐ Other

Medication usage since (decided with doctor):
_____(date)

- ☐ Medication not started yet
- ☐ Takes medication regularly, as prescribed
- ☐ Forgets/skips doses occasionally
- ☐ Takes medication irregularly
- ☐ Medication stopped

Current Medication List:

_____
_____
_____
_____
_____
_____

Instructions to use the quadrant below:

1. Place a mark on the horizontal black line indicating the level of current symptom control between -3 and +3.
2. Place a mark on the vertical black line indicating current side effect levels, between -3 to +3
3. Draw an X where lines from the marks made on each line would meet to show current patient status

COMMENTS:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

What changes have occurred since medication started?

- ☐ Not applicable: no medication taken
- ☐ Small deterioration
- ☐ Small improvement
- ☐ No change
- ☐ Improvement
- ☐ Marked deterioration
- ☐ Marked Improvement
- ☐ Deterioration

Please indicate below the frequency of any side effects experienced since the last medical appointment (mark with an X). Please contact your physician if side effects are significant.

SIDE EFFECT	FREQUENCY				
	Not at all	Sometimes	Often	All the time	Comments
Headache					
Dryness of the skin					
Dryness of the eyes					
Dryness of the mouth					
Thirst					
Sore throat					
Dizziness					
Nausea					
Stomach aches					
Vomiting					
Sweating					
Appetite reduction					
Weight loss					
Weight gain					
Diarrhea					
Frequent urination					
Tics					
Sleep difficulties					
Mood instability					
Irritability					
Agitation/excitability					
Sadness					
Heart palpitations					
Increased blood pressure					
Sexual dysfunction					
Feeling worse or different when the medication wears off (rebound)					
Other:					

Headache, emotional lability initial 6 to 8 weeks BP, weight loss/ lack of wt gain, sleep disturbances, and tics are the more commons one **Afternoon Rebound – Mx depends on family circumstances**

Things to discuss at the next medical appointment:

Questionnaires (Q)

- Familiarity with a particular Questionnaire
- Diagnosis **never** based on Q alone
- In primary care settings – shorter versions – easier to use – mainly for follow up
- Scoring – softwares, manually, built into Q
- Outgrow – need for scoring / report on a Q
- Devise your own based on free versions (no cost per copy of Q – no copyright)
- Diagnostic clues from discrepancies, and from YRS (or talking to the child)

MG:Assessment: 3) Observations

- Observation of the child in the clinic should take account of
  - General level of activity and talkativeness;
  - Distractibility;
  - Interruptions;
  - Attention span;

Unless exceptionally well organised and well behaved – does not necessarily rule out ADHD using DSM -4

Out of 10 -15 minute consult -- spend 3 -4 minutes with MG

~~• Tests for vision and hearing – Usually other agencies eg optometrist / audiologist~~

• handwriting 30 -45 seconds , **reading for 30 seconds**

• Speech and language

• **Height, weight, and blood pressure *****

• **child's appetite and *sleep* *****

• If deemed necessary, psychological assessment: eg HEADSSS

•*History from child + developing some rapport with the child --- very handy --- particularly to discover true status*

A Few Questions I use: Rapport+

- what do you like doing most at home (on returning from school / over the weeknds?
- Do you have ninendo or Wii or Xbox at home?
- I don't know how to play fruit Ninja/ Angry birds/ Earn to Die – will you teach me how to play those games?
- Do you have friends at school
- Do you have any enemies at school?
- Which subject do you hate most? Why ?
- Do you get bullied at school?
- What do you hate most at your home?
- what do you do with your father at home?
- Do you get angry with your mother sometimes?
- Which is your favourite subject? Silence - ? Arts?
- What sports or games do you get to play?

Examples of Questions for parents

- SLEEP: BEARS
  - What time he / she goes to bed?
  - What time does he fall asleep?
  - What time does he wake up?
  - Does he wake up re-freshed?
  - How long before fully awake? Drowsy at school?

Bedtime resistance and delayed sleep onset
Excessive day time sleepiness
Awakenings during night
Regularity, pattern and duration of sleep
Snoring and other symptoms of sleep-disordered breathing[20].

- Probing into alleged behaviours (Antecedent + behaviour)
  - You mentioned about XYZ – could you give me an example of that ?
- Probing into C – Consequence
  - So – what happens after you have given him time out?
- Why do you feel that you can not take his Nintendo away for two days?

Some co-morbidities are also DDs

- Oppositional defiant disorder
- Conduct disorder
- Anxiety
- Tics
- Tourette's
- SLD
- Depression
- Adjustment disorder
- Seizure disorder
- Sleep disorders / OSA, Hypoapnoea

Diff Diagnoses

- Family Dysfunction
- Normal child/ bright child
- Sleep apnoea, Iron deficiency
- Developmental Disorders (eg learning disability, or SLD)
- Attachment disorders
- Substance abuse
- Brain Injury
- Medication side effects
- Sensory impairments
- Occasionally – "The spectrum of Autism – including Aspergers

Role of investigations

- Mainly to rule out differential diagnoses (not necessary if convinced about medical health)
  - FBC, Iron studies, Lead levels
  - CK. TFT, UMS, chromosomal analysis, fragile –X
  - PSG (polysomnography)
  - Establishing atopic tendency – leading to sleep issues
  - Routine – eLFT, Ca Mg PO4
  - As dictated by clinical examination

No real role of these investigations

- TOVA (Test of variables of Attention) a **CPT -- continuous performance tasks.**
- Quantitative EEG to evaluate the brain patterns
- Red cell Essential fatty Acids (EFAs)
- Extended Faecal microbiology to evaluate bowel bacteria profile.
- IgG food allergy panel (Blood test)
- MRI / CT brain / SPECT SCAN
- Mineral hair analysis (hair sample) to test for deposits of nutritional and heavy metals.
- Blood tests for nutritional and/or toxic elements

Commercially available CPTs – continuous performance tests

The Conners CPT (www.mhs.com): Visual stimuli (letters), 14 minutes long. $495 for unlimited use (norms for *children >;6 yrs); $675 for a version normed for younger children.*

IVA—Integrated Visual & Auditory CPT *(www.braintrain.com): Auditory and visual stimuli, 13' long. Normed from* age 6–96 (sic). $295 for the first ten tests, $99 for each subsequent set of 10 tests; or $598 for the first 10 tests and $89 for each subsequent set of 10 tests).

ACPT—Auditory CPT (www.psychcorp.com): Auditory stimuli, 10' long. Norms, age 6–11. $109 for the kit and 12 forms, $16 for 12 additional forms.

TOVA (Tests of Variables of Attention) (www.ADHDwarehouse.com): Visual stimuli (geometric patterns), 21.8' long. Norms for children >6 yrs. $395 (plus $100 annual fee or $10 per test).

G**ordon Diagnostic System (www.gsi-ADHD.com):** Visual stimuli (numbers) on a free-standing, microprocessor-based machine that is portable. Cost $1595, unlimited administrations.

Non- pharmacological Mx – any tricks?

- A few things are worth stressing
- Doctors can not give psychologist type appointments or achieve positive parenting class 10 minutes
- Consistency between carers – ABC – antecedents, behaviours, consequences – both parents should agree to a plan a stick to it
- No empty threats + realistic punishments
- Firmness --without parental raised voice(hard!)
- Creating opportunities for positive interactions****
- Reading books: buy / library – worth 5000 dollars
- Letter to school (?standard printouts) :
    - front of the class ,
    - tasks broken into small components,
    - rewards after components of task rather than whole task
- Medication may not work if behavioural strategies are not in place

Take Home Message

- ADHD is a neurodevelopmental disorder that can persist into adulthood
- Good history, multi-source information is key to the diagnosis
- ADHD has strong genetic component – detecting and guiding adult ADHD parents can help their children
- Important to engage with the child brought to a clinic for consultation for behavioural concerns
- ADHD has wide differential diagnoses and strong association with number of co-morbidities.
- Attachment issues + parental mental health issues + Disordered sleep – important differential diagnoses

Take Home message

- Involve school counsellors / teachers early
- A lot more GP practices can participate in childhood behaviour symptoms management – provided clear communication from other agencies and if they feel well supported by secondary care providers
- Diagnosis – and particularly treatment should be a collaboration between:
  - parents,
  - school / child care minders,
  - GPs,
  - paediatricians,
  - Allied health members (eg psychologists, OT, Speech pathologists)
  - social welfare agencies
- Stress non – pharmacological aspects even when a child is put on medication

Questions?

I don't have A.D.D., it's just...

Hey look! A squirrel!