

FASD ASSESSMENT IN WATERLOO REGION

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Clinic Overview

- Only clinic in Waterloo Region
- 10 assessments
- Ages 2-17
- Free for clients
- Partner agencies provide in-kind services and elect a representative to sit on the Steering Committee
- Multidisciplinary team
- Follows Canadian Guidelines

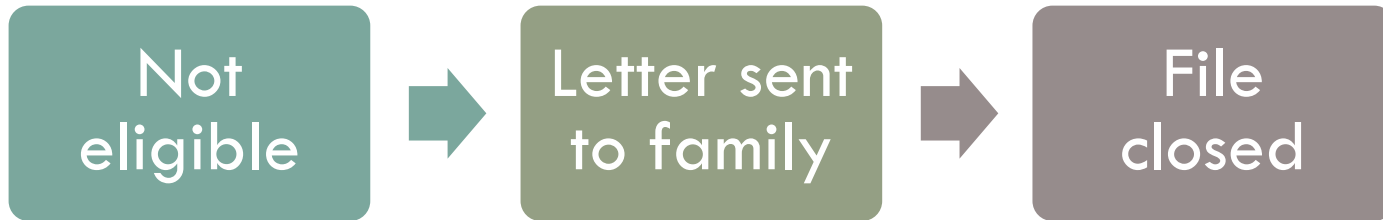
Clinic Members

- ▣ Lutherwood
- ▣ Carizon
- ▣ KidsAbility
- ▣ Family and Children's Services
- ▣ Developmental Services Resource Centre
- ▣ Waterloo Region District School Board
- ▣ Waterloo Catholic District School Board
- ▣ Dr. Malhotra
- ▣ KW Habilitation
- ▣ Child and Parent Resource Institute *

Referral Process

- Referrals submitted all year by partner agencies
- Steering committee meets in winter to prioritize candidates
- School board reps get commitment from individual schools to provide Psych and SLP
- 10 candidates are chosen and the rest of the eligible ones are kept for consideration the following year
- Intakes start in the summer
- Typically one clinic a month from September to June

Clinic Process

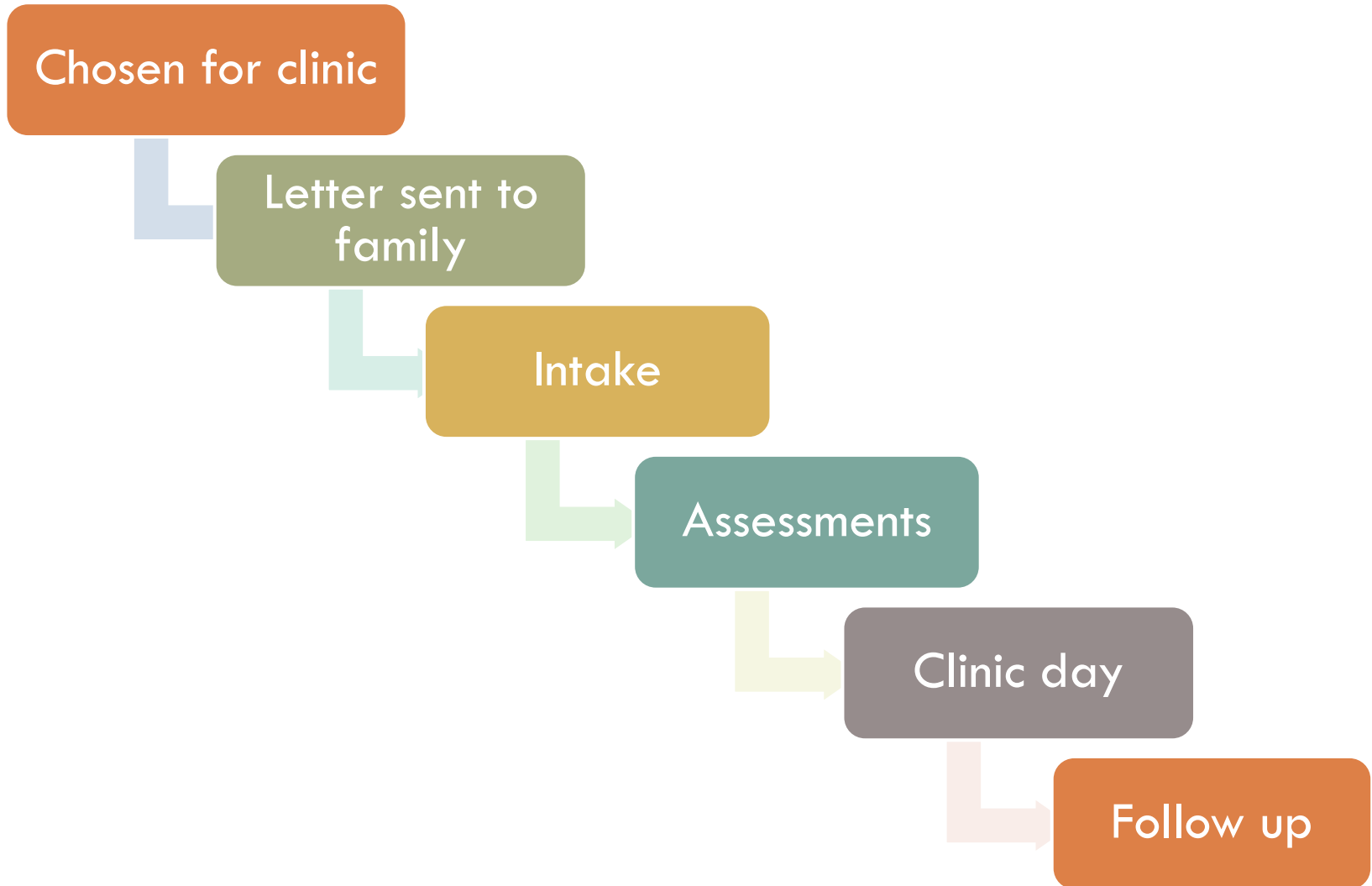


OR



OR

Clinic Process



Diagnostic Process

- The Waterloo Region FASD Diagnostic Team uses the new Canadian Guidelines (released December 2015) for the diagnosis of Fetal Alcohol Spectrum Disorders.
- Team members fill out the brain domain chart the day of the clinic.

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y ≤ 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition		
Language		
Academics		
Memory		
Attention		
Executive Function + Hyperactivity/Impulse Control		
Affect Regulation		
Adaptive Skills, Social Skills and Social Communication		
Facial Features, Growth, Head Circumference		

Client Example

- Elizabeth is a 7 year old girl who lives with her adoptive parents Gary and Jane Smith. She is an only child. Elizabeth was adopted within a month of her birth. Elizabeth's biological mother unaware of her pregnancy until 6 months gestation, at that time she stopped drinking. She reports drinking 10-15 drinks a week and occasionally smoked marijuana throughout the pregnancy.

FASD Diagnostic Clinic



Speech and Language Assessment

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y ≤ 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition		
Language		
Academics		
Memory		
Attention		
Executive Function + Hyperactivity/Impulse Control		
Affect Regulation		
Adaptive Skills, Social Skills and Social Communication		
Facial Features, Growth, Head Circumference		

The Role of the Speech-Language Pathologist (SLP)

- It is important that the SLP providing the speech and language assessment has knowledge of FASD
- It is very difficult to come up with a standard assessment battery for our clinic
- Each speech and language assessment will include assessment of both receptive and expressive language; this is not limited to assessment of vocabulary
- It is important to use both formal and informal measures to evaluate a student's language abilities including classroom observations and language sampling
- Areas assessed include vocabulary, narrative skills, social communication and verbal problem solving


Speech and Language Assessment

- For most children, these are the standardized assessments used (depends on age); scores need to be AT or BELOW 2nd percentile, 2 Standard Deviations
- The Clinical Evaluation of Language Fundamentals 4 or 5, Social Language Development Test, Test of Problem Solving (TOPS), and The Test of Narrative Language (TNL).
- An informal language sample is also a measure used to get information on a child's language ability.

Language in General

- Children with an FASD often develop language skills at a slower rate than is age appropriate
- Regardless of the rate of language development, children with an FASD often have difficulty with communication
- Children with an FASD may display developmentally appropriate vocabulary, grammar and sentence structure but struggle with higher level language abilities

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y <= 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition		
Language	<ul style="list-style-type: none">-grammar and vocabulary skills are a relative strength-significant difficulty with understanding and following directions-significant difficulty understanding spoken paragraphs-poor phonological awareness skills-CELF-4 Receptive Language 0.5th percentile-Expressive Language 5th percentile	
Academics		

Brain Domains (cont.)

Memory		
Attention		
Executive Function + Hyperactivity/Impulse Control		
Affect Regulation		
Adaptive Skills, Social Skills and Social Communication	<ul style="list-style-type: none">-difficulty with peer relationships-difficulty with conversational skills-difficulty with reading non-verbal cues-did not meet criteria on the CELF-4 Pragmatic Profile	
Facial Features, Growth, Head Circumference		

FASD Diagnostic Clinic



Occupational Therapy Assessment

The role of the Occupational Therapist (OT)

Occupational Therapists (OT's) assists children & youth in completing everyday tasks, activities or jobs; these are their occupations.

Common Areas of Focus: Sensory Processing, Motor Skills, Play Skills, Self Care Skills, Daily Routines.

OT –diagnostic team – focus on motor skills (for the diagnosis); provides strategies for sensory needs

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y ≤ 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition		
Language		
Academics		
Memory		
Attention		
Executive Function + Hyperactivity/Impulse Control		
Affect Regulation		
Adaptive Skills, Social Skills and Social Communication		
Facial Features, Growth, Head Circumference		

The Occupational Therapy Assessment

- For most children, these are the assessments used (depends on age); scores need to be AT or BELOW 2nd percentile, 2 Standard Deviations
- ✓ Movement Assessment Battery for Children 2nd Edition (**Fine & **Gross motor)
- ✓ Beery – Developmental Test of Visual-Motor Integration 6th Edition (**Visual motor)
- ✓ Handwriting Sample & Sensory Profile (**Graphomotor)

The role of the Occupational Therapist (OT)

- Occupational Therapy needs often observed in the Diagnostic clinic:
 - child always on the move; yet struggles to stand still (tricky to balance on one leg while putting one foot into pants), difficulty sitting still; distracted visually
 - struggle to form letters and print them quickly
 - sensitive – auditory sense – distracted or discomfort from sound, touch sensitive – great discomfort from the slightest touch (light touch)

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y ≤ 2 nd %ile)
Neuroanatomy/Neurophysiology		
<p>Motor Skills</p>	<p>-restless during meals, difficulty sitting, withdraws from gym time, struggles to settle for bed, yells in busy environments, moves from toy to toy quickly, hits others if sitting too close, works well 1:1, attempts to please, likes to play with younger children, can move quickly but difficulty standing in line, sits to put on pants, awkward pencil grasp, finds mazes challenging, Barbies are frustrating to play with</p>	<p>Manual Dexterity – 1st %tile Aiming & Catching – 25th %tile Balancing – below 2nd %tile Beery – VMI: General VMI – 1st % tile Visual perception – 16th % tile Visual Motor – 1st % tile Handwriting Sample: Printing sample – slower speed, difficulty formation & sequencing letters, not printing letters on the line, awkward grasp, lots of pressure</p>
Cognition		

FASD Diagnostic Clinic



Neuropsychological Assessment

Brain Domains

Domain	Performance	Meets Criterion for Impairment? (Y <= 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition		
Language		
Academics		
Memory		
Attention		
Executive Function + Hyperactivity/Impulse Control		
Affect Regulation		
Adaptive Skills, Social Skills and Social Communication		
Facial Features		
Other physical findings/growth		

Neuropsychological Assessment

- Some domains may be assessed during a standard psychological assessment
- But additional testing/greater depth in some domains
- Supplemental testing particularly in areas of attention, memory, and executive functioning
- Specific tests used depend on clinician, best practice, age of child, reading ability
- Changes from new guidelines *

Neuropsychological Assessment

- Developmental NEuroPSYchological Assessment (NEPSY-II)
- Delis-Kaplan Executive Function System (D-KEFS)
- Test of Everyday Attention for Children (TEA-Ch)
- Rey-Osterrieth Complex Figure Test (RCTF)
- California Verbal Learning Test - Children (CVLT-C)
- Differential Abilities Scales (DAS-II)

Motor Skills

- Primarily assessed by OT, but there are some components that may be tested/observed
- E.g., Visual memory recall tests - fine motor component
- Motor speed
- Observations (e.g., pencil grasp)

Cognition

- Verbal thinking and reasoning
- Non-verbal thinking and reasoning
- Visual Spatial skills
- Impairment if:
 - ▣ FSIQ < 2nd percentile (2 SD below the mean)
 - ▣ Major subdomain score < 2nd percentile (verbal, non-verbal, fluid reasoning)
 - ▣ Large discrepancy (< 3% base rate) and one of the scores is at least 1 SD below the mean

Academic Achievement

Impairment if:

- $<2^{\text{nd}}$ percentile on standardized measure of:
 - Reading
 - Written Expression
 - Math
- Or large discrepancy between cognition and one of above (base rate $<3\%$ and achievement at least $<1\text{SD}$)

Attention

- Sustained/selective attention and resistance to distractions
 - ▣ Inhibition/Impulsivity/Hyperactivity assessed under Executive Function domain *
- Direct evidence of impairment on continuous processing tests (i.e. vigilance) or other standardized measures of sustained attention *
- Indirect evidence from interview, questionnaire, file review, direct observations

Memory

- Visual Memory (object and/or spatial memory, design memory, face memory, picture/scene memory)
- Verbal Memory (narrative/story memory, word list learning, sentence memory, memory for names)
- Observations of confabulation

Executive Functioning + Impulsivity

- Sorting (flexible thinking)
- Fluency (generativity for words and categories)
- Inhibition
- Route finding (visual-spatial problem solving)
- Tower building (complex problem solving)
- Standardized questionnaire of everyday executive functioning (e.g., BRIEF)
- Emphasis on direct evidence (multiple measures) along with indirect evidence (multiple sources) *

Affect Regulation *

- New domain to the diagnostic guidelines
- Impairment if individual meets DSM-5 criteria for:
 - ▣ Major Depressive Disorder (recurrent episodes)
 - ▣ Persistent Depressive Disorder
 - ▣ Disruptive Mood Dysregulation Disorder (DMDD)
 - ▣ Anxiety Disorder (Separation, Selective Mutism, Social Anxiety, Panic, Agoraphobia, GAD)
 - ▣ More than a short-term response to life events

Adaptive Skills/Social Skills/Social Communication

- Assessed through standardized questionnaire, for both parent and teacher (e.g., the ABAS)
- How much help does the child need with everyday activities in different domains?
- Impairment: $<2^{\text{nd}}$ percentile on global composite or major subdomain score
- Social skills are a subdomain score

Associated Features

Sleep

- complex brain function, and can be impaired in children with neurodevelopmental disorders (such as FASD)
- May also be compounded or secondary to health problems, sleep hygiene, social-emotional issues
- Research into best management practices in FASD is ongoing
- Assessed via questionnaire (e.g., Polar BEARS)

Associated Features

Difficulties with attachment

- Possible aversion to touch/physical affection

Case Example

Domain	Performance	Meets Criterion for Impairment? (Y ≤ 2 nd %ile)
Neuroanatomy/Neurophysiology		
Motor Skills		
Cognition	Overall low average profile WISC-IV VCI 15 th percentile; PRI 13 th percentile	✘
Language		
Academics	WIAT-III Reading Composite: 10 th Written Expression: 5 th Math Composite: 1 st	✓
Memory	WRAML-II Verbal Memory 9 th , Visual Memory 5 th , Rey 5 th , CVLT-C 9 th ++frustration; better recognition than recall; confabulated (added additional unrelated info) on narrative memory task, ++ intrusions on CVLT-C	✘
Attention	TEA-Ch Score task 2 nd Parent and Teacher BASC-3 report concerns above clinical threshold	✓

Case Example

Domain	Performance	Meets Criterion for Impairment? (Y <= 2 nd %ile)
Executive Function + Hyperactivity/Impulse Control	WISC-IV working memory 2 nd , deficits on sorting (D-KEFS Sorting 2 nd), Word Generation (1 st), and inhibition (Colour-Word interference 2 nd) ; Tower 18 th Parents report significant need for routine, reminders, external memory aids; ++impulsivity observed during testing; clinically elevated scores on BRIEF including inhibition	✓
Affect Regulation	Regular extreme outbursts, meets criteria for DMDD	✓
Adaptive Skills, Social Skills and Social Communication	Parents report very vulnerable, naïve, poor judgment, many repetitions needed to learn skills ABAS-II GAC 5 th ; Conceptual 13 th , Practical 5 th , Social 1 st	✓
Facial Features		
Other physical findings/growth		

Diagnosis

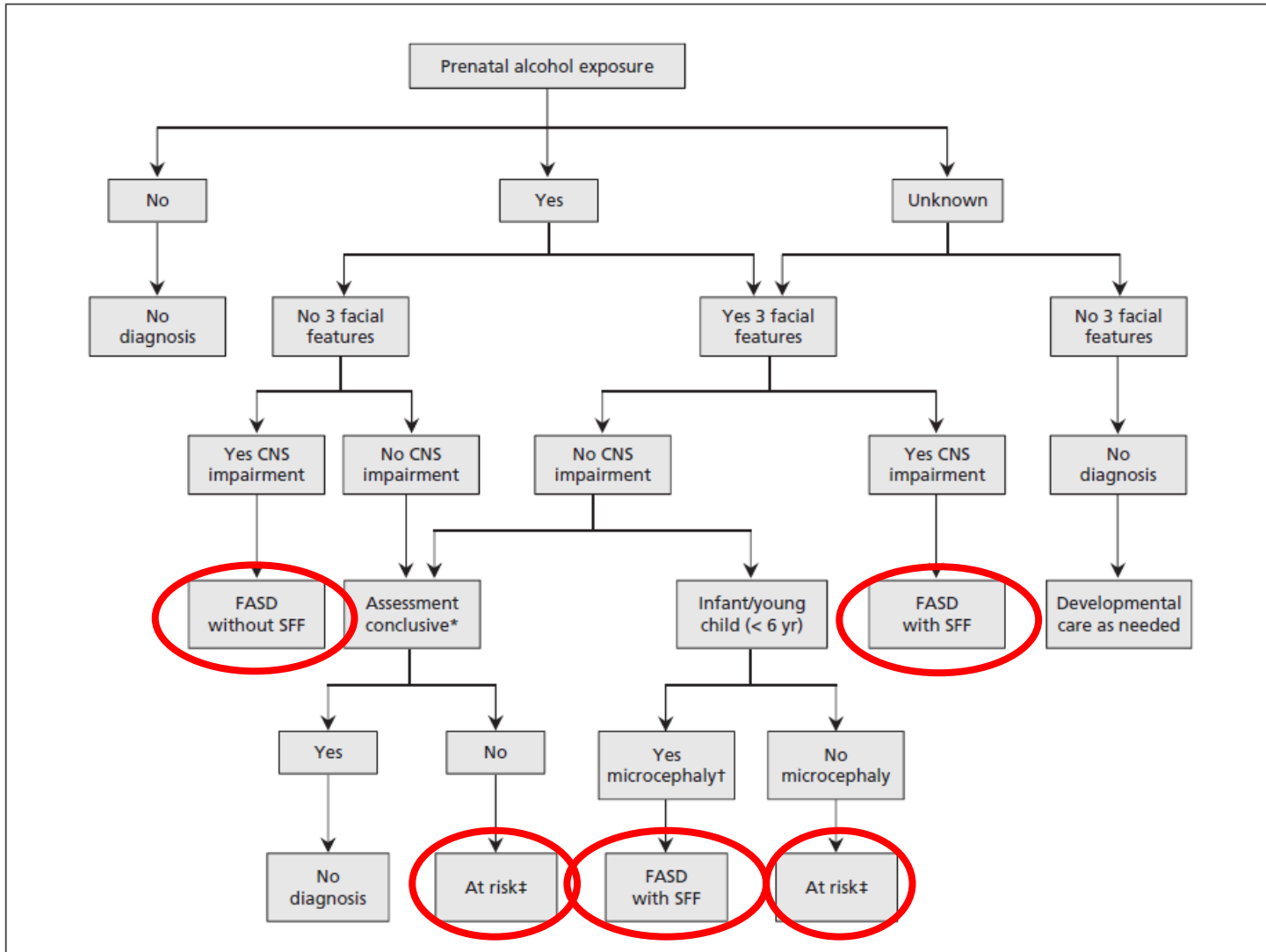


Fig. 1 Cook et al. (2015), CMAJ.

Diagnosis

- FASD with SFF
- FASD without SFF
- At Risk for Neurodevelopmental Disorder and FASD, associated with prenatal alcohol exposure

Case Example

- In our example:
- Diagnosis: FASD with SFF
 - Confirmed prenatal alcohol exposure
 - Presence of all 3 sentinel facial features
 - CNS impairment in more than 3 domains

After the Assessment...Follow up

- Phone call check-in
- School meeting
- Aftercare with families
- Referrals to community resources, funding options
- Up to 8 sessions
- Reports, report summary

Other Clinics

- St. Michael's
- Sick Kids
- Surrey Place
- Anishnawbe Health Centre