

Severe obesity and global developmental delay in preschool children

CANADIAN PAEDIATRIC SURVEILLANCE PROGRAM

100-2305 St. Laurent Blvd.
Ottawa, ON K1G 4J8
Tel: 613-526-9397, ext. 239
Fax: 613-526-3332
cpsp@cps.ca
www.cpsp.cps.ca

REPORTING INFORMATION

(To be completed by the CPSP)

Report number: _____

Month of reporting: _____

Province: _____

Today's date: _____

Please complete the following sections for the case identified above. If the information asked below is not readily available, please leave it blank. Strict confidentiality of information will be assured.

CASE DEFINITION FOR SEVERE OBESITY AND GLOBAL DEVELOPMENTAL DELAY IN PRESCHOOL CHILDREN

Report any new case of a child ≤ 5 years of age with:

1. Severe obesity (SO), defined as body mass index $\geq 99.9^{\text{th}}$ percentile according to references developed by the World Health Organization and the Canadian Pediatric Endocrine Group. The absolute cut-offs by age and sex are shown below in **Appendix 1**.

AND

2. Global developmental delay (GDD), defined as a significant delay in two or more developmental domains, including:
 - Gross motor
 - Fine motor
 - Speech/language
 - Cognitive
 - Social/personal
 - Delay in activities of daily living

Month first seen (mm): _____

SECTION 1 – DEMOGRAPHIC INFORMATION

1.1 Date of birth: ____ / ____ / ____
DD MM YYYY

1.2 Sex: Male ____ Female ____

1.3 Postal code (first 3 digits only): ____ ____ ____

1.4 Population groups (check all that apply):

☐ Arab

☐ Black

☐ Chinese

☐ Filipino

☐ Japanese

☐ Korean

☐ Latin American

☐ White

☐ First Nations

☐ Inuit

☐ Métis

☐ Unknown

☐ Southeast Asian

☐ South Asian

☐ West Asian

☐ Other, specify: _____

(e.g., Vietnamese,
Cambodian, Laotian)

(e.g., East Indian,
Pakistani, Sri Lankan)

(e.g., Iranian, Afghan)

SECTION 2 – PATIENT INFORMATION

2.1 Please attach de-identified growth chart (if available)

Date performed: ____ / ____ / ____
DD MM YYYY

2.2 Patient's **most recent** growth measures:

Height: _____ cm OR _____ inches

Length: _____ cm OR _____ inches

Weight: _____ kg OR _____ lbs

Head circumference: _____ cm OR _____ inches

2.3 Current physical features: Blood pressure: ____ / ____ Waist circumference: _____ cm OR _____ inches

- 2.4 Global developmental delay is defined as a significant delay in ≥ 2 developmental domains.

(Check all that apply): **Yes** **No** **Unknown**

Gross motor delay	_____	_____	_____
Fine motor delay	_____	_____	_____
Speech/language delay	_____	_____	_____
Cognitive delay	_____	_____	_____
Social/personal delay	_____	_____	_____
Delay with activities of daily living	_____	_____	_____

SECTION 3 – FAMILY HISTORY

☐ Not obtained in the course of my care of this case

- 3.1 Have members of your patient's **biological family** been diagnosed with (check all that apply):

Diagnosed	None	Mother	Father	Sibling	Unknown
ADHD	_____	_____	_____	_____	_____
Alcohol and/or drug problem	_____	_____	_____	_____	_____
Anxiety and/or depression	_____	_____	_____	_____	_____
Asthma	_____	_____	_____	_____	_____
Autism spectrum disorder	_____	_____	_____	_____	_____
Diabetes	_____	_____	_____	_____	_____
Global developmental delay	_____	_____	_____	_____	_____
Heart disease and/or stroke	_____	_____	_____	_____	_____
High cholesterol	_____	_____	_____	_____	_____
Hypertension	_____	_____	_____	_____	_____
Intellectual and/or learning disability	_____	_____	_____	_____	_____
Obesity	_____	_____	_____	_____	_____

SECTION 4 – PREGNANCY/BIRTH INFORMATION

☐ Not obtained in the course of my care of this case

- 4.1 Age of mother at pregnancy: _____ years

- 4.2 Weight prior to pregnancy: _____ kg Weight prior to delivery: _____ kg Unknown _____

- 4.3 Prescribed medications in pregnancy: Yes _____ No _____ If known, list: _____

- 4.4 Pregnancy/postpartum history (check all that apply): **Yes** **No** **Unknown**

Tobacco use	_____	_____	_____
Alcohol use	_____	_____	_____
Illicit drug use	_____	_____	_____
Gestational diabetes	_____	_____	_____
Hypertension	_____	_____	_____
Postpartum depression	_____	_____	_____

- 4.5 Birth/postpartum history:

Gestational age: _____ weeks Birth weight: _____ kg

(Check all that apply):

	Yes	No	Unknown
Complicated birth (<i>If yes, please circle: breech, failure to progress, PROM</i>)	_____	_____	_____
Required neonatal intensive care unit care	_____	_____	_____
Exclusively breastfed	_____	_____	_____
<i>If yes, length of time: _____ months</i>			
Total time breast fed (exclusive and non-inclusive): _____ months			
Formula fed	_____	_____	_____
<i>If yes, age of introduction: _____ months</i>			

Yes No Unknown

Combination breast and formula fed

If yes, age of introduction of formula _____ months

4.6 Solid foods – age of introduction: _____ months

SECTION 5 – CLINICAL PRESENTATION

☐ Not obtained in the course of my care of this case

5.1 Since what age have you been following this patient? _____ years _____ months

5.2 At what age was the diagnosis of global developmental delay made? _____ years _____ months

5.3 At what age did you first have concerns about weight? _____ years _____ months

5.4 Please describe your role in this patient's care.

_____ Primary care paediatrician

_____ Consulting paediatrician

_____ Consulting developmental paediatrician

_____ Consulting geneticist

_____ Consulting endocrinologist

_____ Other, specify: _____

SECTION 6 – CLINICAL FINDINGS AND INVESTIGATIONS

6.1 Health problems (check all that apply) – current or past:

Yes No Unknown

ADHD

Asthma or recurrent wheeze

Blount's disease (or bowing of legs)

Bullying

Depression and/or anxiety

Diabetes

Diagnosed sleep apnea

Fatty liver disease

Fractures

Gastroesophageal reflux

Hearing loss

High blood pressure

Hyperlipidemia

Hypothyroidism

Insulin resistance and/or acanthosis nigricans

Nutrient deficiencies

If yes, specify: _____

Recurrent otitis media

School and/or behavioural problems

Seizures

Snoring

Any other health problems

If yes, specify: _____

6.2 Current medications and non-prescription products:

Yes No Unknown If yes, please list: (drug, dose, frequency)

Medications

Non-prescription medications

Natural health products

Vitamin or mineral supplements

Other

6.3 Have genetic tests been ordered? Yes____ No____ Pending____ Unknown____

(See **Appendix 2** if you would like more information on how to obtain microarray testing.)

If yes:

a) Has a microarray been ordered? Yes____ No____ Pending____ Unknown____

b) Please record the result of genetic testing: Normal____ Abnormal____ Pending____ Unknown____

If abnormal, what was the result of the specific genetic test (see **Appendix 3**)?

____ (OR attach de-identified results)

6.4 Has the patient been diagnosed with any developmental disorders, including:

	Yes	No	Unknown
Autism spectrum disorder	____	____	____
Cerebral palsy	____	____	____
Post-encephalitis/meningitis	____	____	____
Other (please list): _____			

6.5 Has central nervous system imaging been completed? Yes____ No____ Unknown____

If yes, provide results (check all that apply):

____CT head Results: _____

____MRI brain Results: _____

____Ultrasound head Results: _____

6.6 Is the patient currently enrolled in any obesity management program? Yes____ No____ Unknown____

6.7 Which of the following other clinicians/services have been involved in the patient's care?

(check all that apply):

	Yes	No	Unknown
Autism assessment	____	____	____
Autism intervention	____	____	____
Child development program	____	____	____
Clinical geneticist	____	____	____
Developmental paediatrician	____	____	____
Dietitian	____	____	____
Family physician	____	____	____
General paediatrician	____	____	____
Home visiting program	____	____	____
Neurologist	____	____	____
Obesity program	____	____	____
Occupational therapy	____	____	____
Paediatric endocrinologist	____	____	____
Physiotherapist	____	____	____
Psychology or psychiatry	____	____	____
Public health nurse	____	____	____
Social worker	____	____	____
Speech therapy	____	____	____

6.8 What has been the biggest challenge in providing care for this patient?

☐ I agree to be contacted by the CPSP for further information on this questionnaire.

☐ I do not wish to be contacted by the CPSP for further information on this questionnaire.

SECTION 7 – REPORTING PHYSICIAN

First name _____ Surname _____

Address _____

City _____ Province _____ Postal code _____

Telephone number _____ Fax number _____

E-mail _____ Date completed _____

Thank you for completing this form.

(SOGDD 2018/02)

Appendix 1: Age- and sex-specific cut-offs for severe obesity using World Health Organization Growth Standards*

AGE (years)	BOYS BMI ≥99.9th percentile	GIRLS BMI ≥99.9th percentile
6 months	22.3	22.3
1	21.6	21.6
2	20.6	20.6
3	20.0	20.3
4	19.9	20.6
5	20.3	21.1

*de Onis M, Garza C, Victora CG, Onyango AW, Frongillo EA, Martines J. The WHO Multicentre Growth Reference Study: planning, study design, and methodology. *Food and nutrition bulletin*. 2004;25(1 Suppl):S15–26.

Appendix 2: Microarray Testing

For more information on how to obtain microarray testing, please contact the Severe obesity and global developmental delay in preschool children study coordinator at 780-394-0066.

Appendix 3: Potential Results of Abnormal Genetic Testing

Melanocortin pathway defects	Oligogenic genomic disorders, including disorders of imprinting	Obesity with retinitis pigmentosa	
Leptin deficiency	Prader-Willi syndrome	Bardet-Biedl syndrome	
Leptin receptor deficiency	Beckwith-Wiedemann syndrome	Alström syndrome	
Pro-opiomelanocortin deficiency	Wilms tumor, aniridia, genitourinary anomalies, mental retardation, and obesity syndrome	Cohen syndrome	
Prohormone convertase 1/3 deficiency	Albright hereditary osteodystrophy	Monogenic obesity disorders not otherwise classified	
Melanocortin 4 receptor deficiency	Fragile X syndrome with Prader-Willi phenotype	SIM1 deficiency	
Brain-derived neurotrophic factor deficiency	Maternal uniparental disomy chromosome 14	Oligogenic disorder, not otherwise classified	
Neurotrophic tyrosine kinase, receptor type 2 deficiency	Chromosomal microdeletion 16p11.2	Chromosomal aneuploidies	
Other monogenic syndromes of melanocortin pathway, specified	Carpenter syndrome	Other aneuploidy, specified	
Other	Other		