



**EARLY DEVELOPMENT INSTRUMENT**  
a population-based measure for communities

# Summary Report

Senior Kindergarten Students in the  
province of Ontario

**Regional Municipality of Waterloo**  
**2022/2023**

*A snapshot of children's  
developmental health at school entry*





**EARLY DEVELOPMENT INSTRUMENT**  
a population-based measure for communities

Questionnaire Information .....	1
EDI Outcomes .....	2
Subdomain Profiles .....	5
Contextual Factors .....	9
Special Needs Report .....	12
Glossary .....	15

## About the EDI

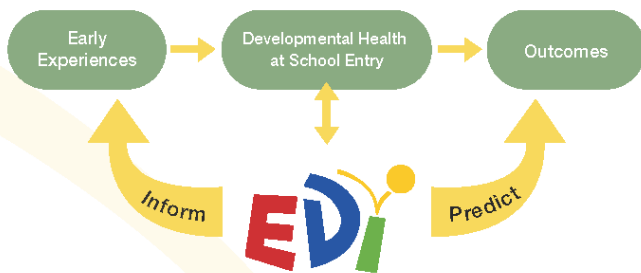
A teacher-completed instrument called the Early Development Instrument (EDI) was developed at the Offord Centre for Child Studies at McMaster University to measure children's ability to meet age-appropriate developmental expectations at school entry. The EDI focuses on the overall outcomes for children as a health-relevant, measurable concept that has long-term consequences for individuals and populations. The data derived from the collection of the EDI facilitate and encourage community, provincial, national, and international monitoring of the developmental health of our young learners.

Data collection across Canada shows that in most jurisdictions 25% or more of children entering Kindergarten are vulnerable in at least one aspect of their development. Further research linking EDI findings to later educational data demonstrate that, on average, Kindergarten vulnerability predicts ongoing vulnerability in the school system. Numerous studies have shown that early vulnerability is associated with a child's lifelong health, learning, and behaviour.

The EDI has been designed as a tool assisting in the mobilization of communities and policy makers to facilitate a positive impact on children's development in their local areas. Understanding the state of early development for all children population-wide is foundational to mobilizing stakeholders towards change.

70 school boards across Ontario participated in the Cycle VI EDI data collection. In 2023, EDI questionnaires were completed later in the school year than those in previous EDI cycles. When analyzing EDI results, it is important to keep in mind that children in the Cycle VI cohort are slightly older than in previous cohorts.

This report is complemented by the Interpretation Guide, which provides in depth information regarding the history of the EDI, development of scores and working with data. Please be sure to refer to this Guide for assistance.



Thanks to all of our partners for their hard work and commitment to the EDI. A very special thanks to all of the teachers who have committed their time and energy to filling out EDI questionnaires over the years. Without you, none of this would have been possible.



## Questionnaire Information

The table below describes the number of EDI questionnaires completed, the number of questionnaires which did not meet the criteria for analysis (excluded) for the population of children both with and without Special Needs.

	Students without Special Needs	Students with Special Needs
Completed EDI Questionnaires	5673	491
Excluded EDI Questionnaires*	267 (4.7%)	15 (3.1%)
Questionnaires Valid for Analysis (VFA** & VFA-SN***)	5406 (95.3%)	476 (96.9%)

\* Questionnaires are excluded if they have incomplete data in specific variables. This includes students who have been in class less than one month, the special needs question is left blank, and questionnaires missing more than 25% of responses to core questions.

\*\*Questionnaires valid for analysis count omits excluded questionnaires and students with special needs

\*\*\*Questionnaires valid for analysis for students with special needs count omits excluded questionnaires and students without a designation of special needs

## Descriptive characteristics of the Regional Municipality of Waterloo 2022/2023 cohort (N=5406)

	Number	%
<b>Sex</b>		
Girl	2726	50.4%
Boy	2678	49.5%
Missing	2	0.0%
<b>Language Status</b>		
ELL/ALF/PANA	1006	18.6%
None	3731	69.0%
Missing	669	12.4%
<b>Language Immersion</b>		
French Immersion	0	0.0%
Other Immersion	2	0.0%
No Language Immersion	5169	95.6%
Missing	235	4.3%
<b>Age</b>		
Average Age	5.9	-

These are some examples of the contextual variables that may influence EDI scores. Communities are encouraged to explore other contextual factors that may help better explain EDI data.

On average, older children have better EDI scores than younger children.





### Distribution of Scores

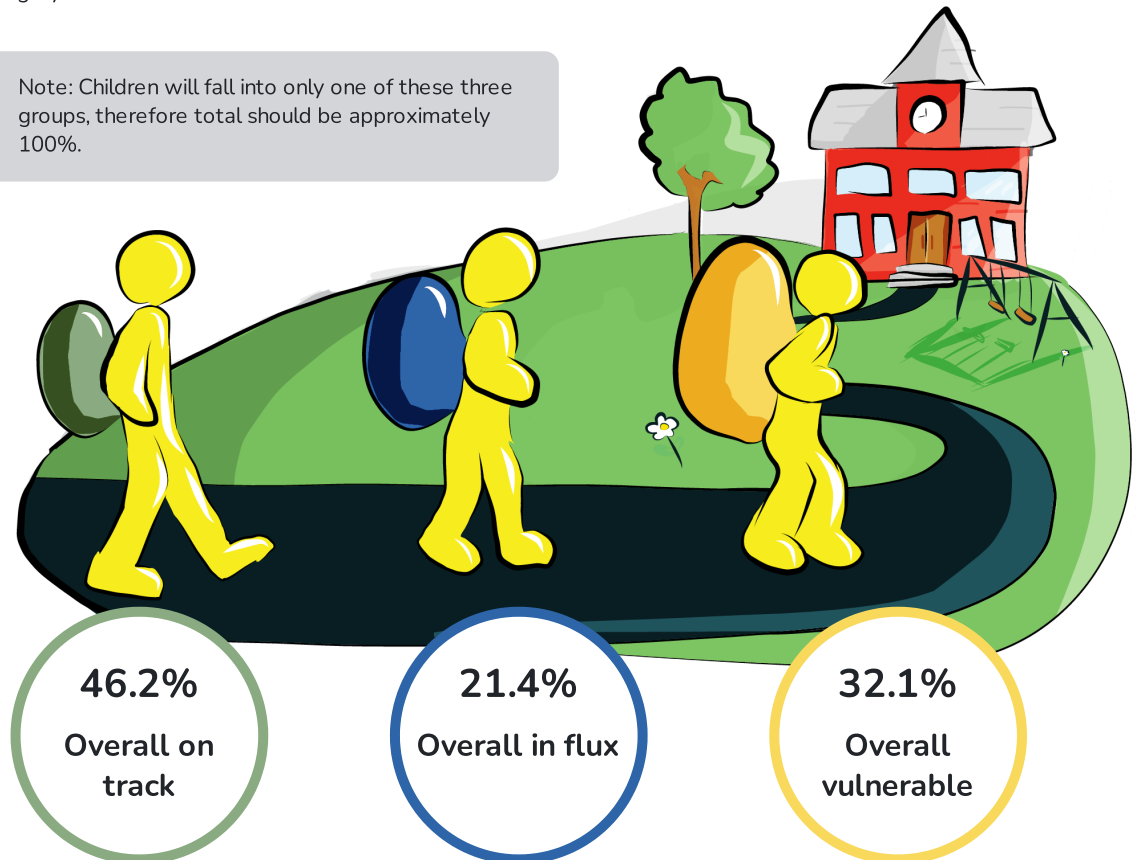
Data from the baseline EDI collection have been used to create cut-off scores that divide children's scores into three categories. A site's baseline collection is its first full implementation. Comparing collections to the baseline allows us to determine whether children's developmental outcomes are getting better or worse.

## EDI Outcomes

The EDI measures children's ability to meet age-appropriate developmental expectations across five domains: Physical Health and Well-being, Social Competence, Emotional Maturity, Language and Cognitive Development, and Communication Skills and General Knowledge. Please see the glossary at the end of this report, as well as the Interpretation Guide on the EDI website for more detailed information about the domains.

The groups below are based on the distribution of scores, however they do not represent a total overall of each category of the distribution.

Note: Children will fall into only one of these three groups, therefore total should be approximately 100%.



Children with scores above the 25th percentile cut-off on all five domains. These children are considered to be developing well for their age in all areas of developmental health.

These children are not vulnerable on any of the domains, however they are not on track on all five domains. This group of children falls above the 10th percentile on all 5 domains, but below the 25th percentile on at least one domain. These children may need more support or may catch up with their peers. (These children are not all in the at risk category, they may fall into the at risk category on some domains, but on track in others).

Children with scores below the 10th percentile cut-off on any of the five domains. Being vulnerable means that children are at an increased risk of difficulties and, without additional support, may continue to experience challenges.



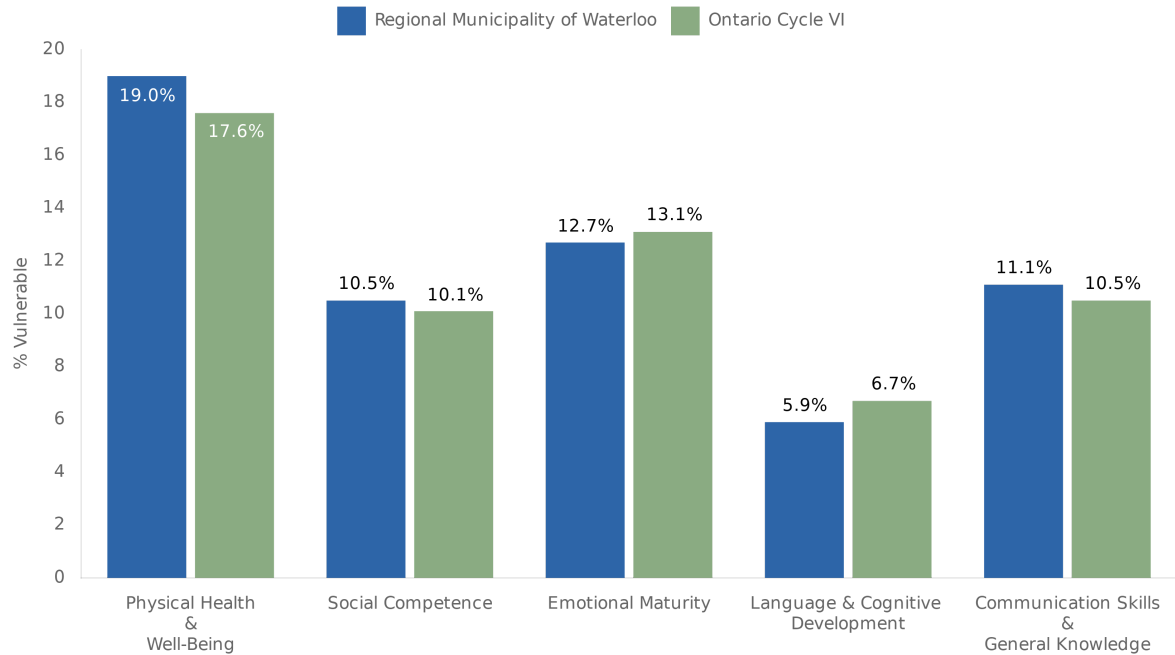


The EDI uses the 10th percentile for vulnerability because it captures all the children who are struggling, even those whose struggles may not be apparent.

## Vulnerable Children

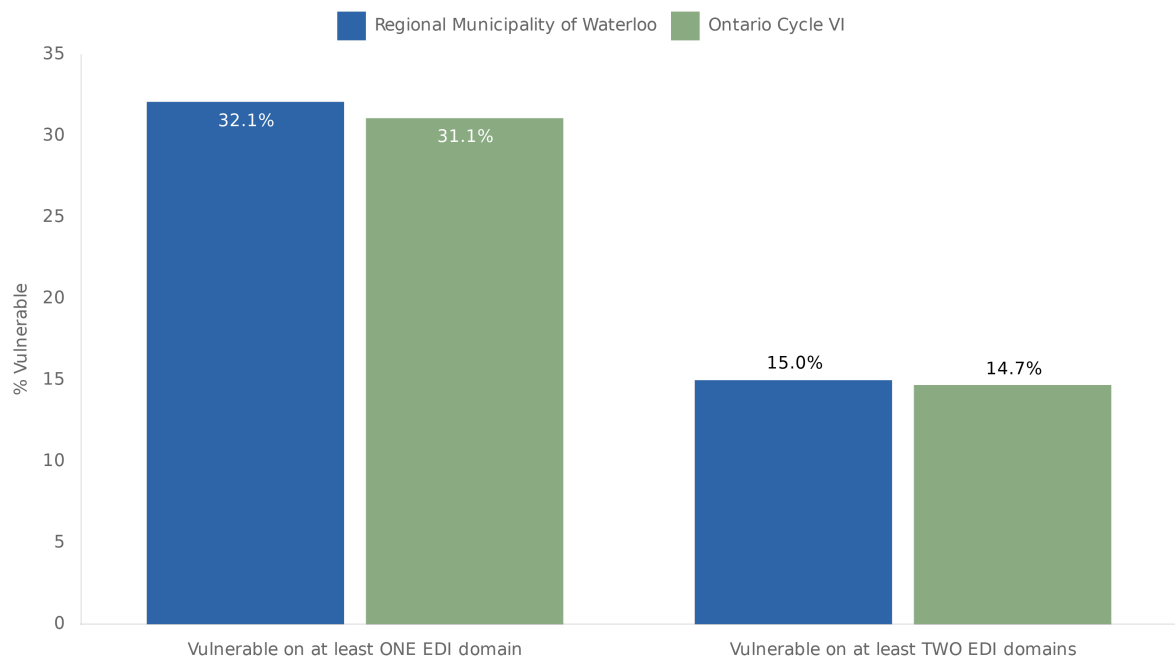
"Vulnerable" describes the children whose scores fall below the 10th percentile cut-off of the Ontario baseline population on any of the five domains. Higher vulnerability indicates that a greater percentage of children are struggling. The Ontario Cycle VI collection is included here as a comparison.

**Percentage of Children Vulnerable by Domain**



The graph below illustrates the Regional Municipality of Waterloo 2022/2023 results for the percentage of children vulnerable on at least one and at least two domains.

**Percentage of Children Vulnerable**





EDI research across Canada shows that vulnerability at school entry is associated with poorer scores on provincial standardized tests in Grades 3 and 4. Research also shows an association between vulnerability and the likelihood of having some form of Special Needs status by Grade 9.

(Brown & Parekh, 2010; Calman & Crawford, 2013; D'Angiulli, Warburton, Dahinten, & Hertzman, 2009)



## Distribution of EDI Scores

The graphs below illustrate the percentage of Regional Municipality of Waterloo children who fall in the Vulnerable, At Risk, and On Track categories for each domain. Your site is shown in relation to the distribution of scores in Ontario Cycle VI.

### Regional Municipality of Waterloo (n = 5406)

#### Physical Health & Well-Being (n = 5402)



#### Social Competence (n = 5405)



#### Emotional Maturity (n = 5393)



#### Language & Cognitive Development (n = 5400)



#### Communication Skills & General Knowledge (n = 5404)



Children with scores below the 10<sup>th</sup> percentile

Children with scores between the 10<sup>th</sup> and 25<sup>th</sup> percentiles

Children with scores above the 25<sup>th</sup> percentile

### Ontario Cycle VI (n = 83839)

#### Physical Health & Well-Being (n = 83796)



#### Social Competence (n = 83834)



#### Emotional Maturity (n = 83648)



#### Language & Cognitive Development (n = 83708)



#### Communication Skills & General Knowledge (n = 83809)



Children with scores below the 10<sup>th</sup> percentile

Children with scores between the 10<sup>th</sup> and 25<sup>th</sup> percentiles

Children with scores above the 25<sup>th</sup> percentile

Note: Distributions may not equal 100% due to missing values in a domain



Exploring subdomains is an important step in determining the areas of development that are influencing vulnerability rates in various domains. Subdomains in which a large percentage of children are doing poorly can be used to inform the action needed to address children's weaknesses.

## Subdomain Profiles

Each of the five domains is divided into subdomains, except for Communication Skills and General Knowledge. The subdomains were originally identified using factor analysis. The table below shows the breakdown of subdomains for each domain.

Physical Health & Well-being	Social Competence	Emotional Maturity	Language & Cognitive Development	Communication Skills & General Knowledge
Physical readiness for school day	Overall social competence	Prosocial & helping behaviour	Basic literacy	Communication skills & general knowledge
Physical independence	Responsibility & respect	Anxious & fearful behaviour	Interest in literacy/numeracy & memory	
Gross & fine motor skills	Approaches to learning	Aggressive behaviour	Advanced literacy	
	Readiness to explore new things	Hyperactivity & inattention	Basic numeracy	

Scores for domains and subdomains on the EDI vary from 0 to 10. Some subdomains represent skills that a child in kindergarten, based on his or her developmental age, is expected to have mastered already. Other subdomains represent areas of development that are still emerging.

Based on skills and abilities that each subdomain represents, groups of scores were identified representing children who met:

- All/almost all of the developmental expectations
- Some of the developmental expectations
- Few/none of the developmental expectations

In contrast to the "on track", "at risk", and "vulnerable" groups identified for domains in the EDI Descriptive Report, which are based on the distribution of scores in the province/territory or in Canada, the subdomain categories are distribution-free.

The following section outlines the percentage of your children who are meeting all/almost all, some, or few/none of the developmental expectations for each subdomain. An investigation of percentages of children who fall into the "few/none" category will identify areas of the greatest weakness in the population. The results for the Ontario Cycle VI population are included as a comparison.





■ Few/None ■ Some ■ All/Almost All

## Physical Health & Well-being

### Physical readiness for school day

Children who never or almost never experienced being dressed inappropriately for school activities, coming to school tired, late or hungry.



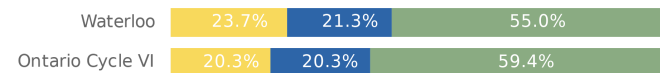
### Physical independence

Children who are independent in looking after their needs, have an established hand preference, are well coordinated, and do not suck a thumb/finger.



### Gross & fine motor skills

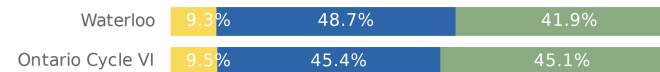
Children who have an excellent ability to physically tackle the school day and have excellent or good Gross & fine motor skills.



## Social Competence

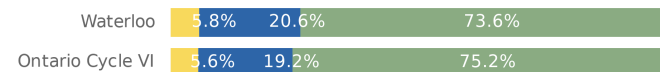
### Overall social competence

Children with excellent or good overall social development, very good ability to get along with other children and play with various children, usually cooperative and self-confident.



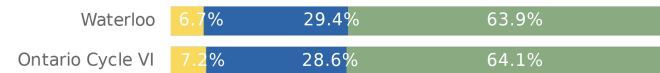
### Responsibility and respect

Children who always or most of the time show respect for others, and other's property, follow rules and take care of materials, accept responsibility for actions, and show self-control.



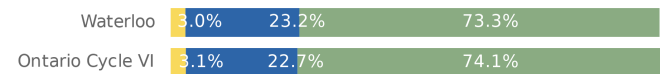
### Approaches to learning

Children who always or most of the time work neatly, independently, and solve problems, follow instructions and class routines, easily adjust to changes.



### Readiness to explore new things

Children who are curious about the surrounding world, and are eager to explore new books, toys and games.



“Children grow according to the qualities of stimulation, support, and nurturance they get on a moment to moment basis throughout their waking hours.”

– Dr. Clyde Hertzman



## Emotional Maturity

Few/None Some All/Almost All

### Prosocial and helping behaviour

Children who often show most of the helping behaviours: helping someone hurt, sick or upset, offering to help spontaneously, invite bystanders to join in.



### Anxious and fearful behaviour

Children who rarely or never show most of the anxious behaviours; they are happy and able to enjoy school, and are comfortable being left at school by caregivers.



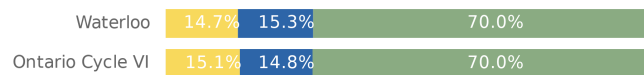
### Aggressive behaviour

Children who rarely or never show most of the aggressive behaviours; they do not use aggression as a means of solving a conflict, do not have temper tantrums, and are not mean to others.



### Hyperactivity & inattention

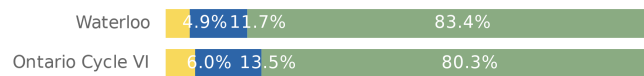
Children who never show most of the hyperactive behaviours; they are able to concentrate, settle in to chosen activities, wait their turn, and most of the time think before doing something.



## Language & Cognitive Development

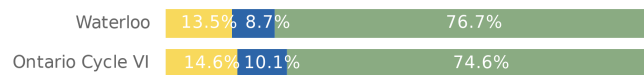
### Basic literacy

Children who have all the basic literacy skills: know how to handle a book, can identify some letters and attach sounds to some letters, show awareness of rhyming words, know the writing directions, and are able to write their own name.



### Interest in literacy / numeracy and memory

Children who show an interest in books and reading, math and numbers, and have no difficulty with remembering things.



### Advanced literacy

Children who have at least half of the advanced literacy skills: reading simple, complex words or sentences, writing voluntarily, writing simple words or sentences.



### Basic numeracy

Children who have all the basic numeracy skills: can count to 20 and recognize shapes and numbers, compare numbers, sort and classify, use one-to-one correspondence, and understand simple time concepts.





“If we can address needs of children early, rather than later, we can help each child reach their maximum potential. It also means we can equal the playing field for all children.”

- Dr. Fraser Mustard

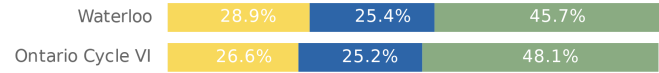


## Communication Skills & General Knowledge

■ Few/None ■ Some ■ All/Almost All

### Communication Skills & General Knowledge

Children who have excellent or very good communication skills; can communicate easily and effectively, can participate in story-telling or imaginative play, articulates clearly, show adequate general knowledge, and are proficient in their native language.





## Section D – Special Concerns

Note: the following chart ONLY includes children who do not have Special Needs.

### Special Concerns

Minimum: 0

Maximum: 11

- physical disability
- visual impairment
- hearing impairment
- speech impairment
- learning disability
- emotional problem
- behavioural problem
- home environment / problems at home
- chronic medical/health problems
- unaddressed dental needs
- other

### Special Skills

Minimum: 0

Maximum: 7

- Demonstrates special numeracy skills or talents
- Demonstrates special literacy skills or talents
- Demonstrates special skills or talents in art
- Demonstrates special skills or talents in music
- Demonstrates special skills or talents in athletics/dance
- Demonstrates special skills or talents in problem solving in a creative way
- Demonstrates special skills or talents in other areas

Special Concerns <b>10.5%</b> (570) Yes	Yes, Observed		Yes, Parent Info/Diagnosis		Yes, Both	
	Number	%	Number	%	Number	%
Physical Disability	8	0.1%	6	0.1%	11	0.2%
Visual Impairment	15	0.3%	23	0.4%	20	0.4%
Hearing Impairment	5	0.1%	9	0.2%	7	0.1%
Speech Impairment	140	2.6%	19	0.4%	72	1.3%
Learning Disability	98	1.8%	5	0.1%	6	0.1%
Emotional Problem	170	3.1%	8	0.1%	32	0.6%
Behavioural Problem	200	3.7%	10	0.2%	32	0.6%
Home Environment / Problems at Home	88	1.6%	22	0.4%	24	0.4%
Chronic Medical / Health Problems	17	0.3%	21	0.4%	17	0.3%
Unaddressed Dental Needs	20	0.4%	4	0.1%	0	0.0%
Other	75	1.4%	21	0.4%	10	0.2%

	Yes		No		Missing	
	Number	%	Number	%	Number	%
Child Receiving School Based Support	340	6.3%	4994	92.4%	72	1.3%
Child Currently Receiving Further Assessment	154	2.8%	5106	94.5%	146	2.7%
Child Currently on Wait List to Receive Further Assessment	136	2.5%	5106	94.5%	164	3.0%
Child Needs Further Assessment	665	12.3%	4570	84.5%	171	3.2%

Children with 1+ Special Skills

**34.8%**

Children with 1+ Special Concerns

**14.2%**



**Early Intervention**

**Program:** Includes: speech/ language therapy, a parent who attended a parenting program, a Head Start program, a School's Cool program, etc., or if child has had similar in-home services

**Section E - Additional Questions**

Child attended Junior Kindergarten		
Yes	No	Missing
89.6%	7.4%	3.0%
4843	399	164

Child attended an early intervention program		
Yes	No	Missing
3.3%	74.7%	21.9%
180	4040	1186

Child attended other community learning program		
Yes	No	Missing
31.9%	18.6%	49.4%
1727	1007	2672

In non-parental care prior to kindergarten entry		
Yes	No	Missing
21.9%	37.0%	41.1%
1184	2002	2220

**Type of non-parental care arrangement prior to Kindergarten entry**

Centre-based, within our school building	4.2%
	226
	Yes

Centre based, in the community	6.7%
	364
	Yes

Home based child care	5.4%
	290
	Yes

Child's home, non-relative	0.6%
	32
	Yes

Child's home, relative	2.6%
	139
	Yes

Pre-school/Nursery school	2.0%
	110
	Yes

Other/Don't know	7.4%
	401
	Yes

**Time spent in care arrangement**

Full-Time		Part-Time		Missing	
Number	%	Number	%	Number	%
797	14.7%	178	3.3%	4431	82.0%





## Section E - Additional Questions

Recognizing the contextual factors in your community, like a child's experiences before school entry, may help explain EDI vulnerability. In addition to the variables on the EDI, all communities are encouraged to explore locally relevant factors that may affect children's development.



### Type of care arrangement before school

Centre based, within our school building	10.5%
	570
	Yes

Centre based, in the community	0.1%
	7
	Yes

Home based child care	0.8%
	44
	Yes

Child's home, non-relative	0.1%
	5
	Yes

Child's home, relative	1.0%
	52
	Yes

Other/don't know	0.2%
	10
	Yes

Child gets dropped off <b>before</b> school			
27.4%	61.3%	9.3%	2.0%
1480	3314	501	107
By bus	By parent/guardian	From school-based child-care	Other

### Type of care arrangement after school

Centre based, within our school building	16.4%
	887
	Yes

Centre based, in the community	0.1%
	8
	Yes

Home based child care	1.1%
	60
	Yes

Child's home, non-relative	0.4%
	21
	Yes

Child's home, relative	1.6%
	84
	Yes

Other/don't know	0.1%
	5
	Yes

Child gets picked up <b>after</b> school			
27.0%	55.5%	14.7%	2.7%
1460	3000	795	147
By bus	By parent/guardian	From school-based child-care	Other



## Special Needs Report

The rate of special needs amongst kindergarten children in the EDI Normative II sample is 3.8%. This is comparable to the rate of 4.2% of children ages 5 to 9 with disabilities found on the 2006 Statistics Canada Participation and Activity Limitation Survey.

(Janus, Hughes, & Duku, 2010; Statistics Canada, 2008).

Under the definition of special needs is a broad range of disorders affecting behaviour, communication, as well as physical or intellectual development. Children with special needs often contend with multiple problems, which require tailor-made, flexible support. These children may also have above average abilities in certain areas, adding to the complexity of providing appropriate support to help them reach their optimal development.

Because of the unique challenges associated with helping children with special needs, the following report is provided so not to lose the individuality of the results of these children. The more specific needs of this group must be addressed individually. Providing the following Special Needs Report allows for the school boards and communities to focus on these children's needs and to plan better for future years.

### Children with Special Needs: General Guidelines

**Yes** - The child has already been identified as having special needs (e.g., a medical, physical, mental health diagnosis by a doctor, pediatrician, psychologist, or assessment by a Speech and Language Pathologist, Audiologist, etc.).

Child requires special assistance in the classroom

**No** - Gifted or talented children

Children only suspected to be suffering from a disabling condition, or having a condition not severe enough to be classified as "special needs"



### Descriptive characteristics of the Regional Municipality of Waterloo 2022/2023 Special Needs cohort (N=476)

	Number	%
<b>Sex</b>		
Girl	155	32.6%
Boy	321	67.4%
Missing	0	0.0%
<b>Language Status</b>		
ELL/ALF/PANA	92	19.3%
None	329	69.1%
Missing	55	11.6%
<b>Language Immersion</b>		
French Immersion	0	0.0%
Other Immersion	1	0.2%
No Language Immersion	453	95.2%
Missing	22	4.6%
<b>Age</b>		
Average Age	5.8	-



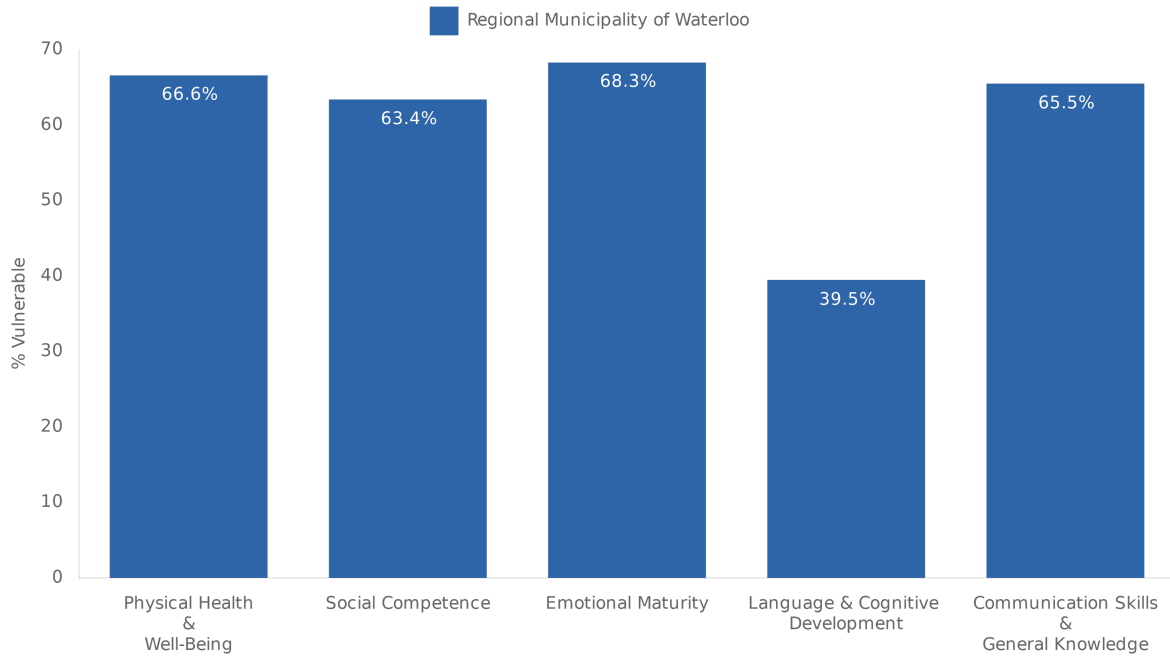


## Vulnerable Children

The EDI uses the 10th percentile for vulnerability because it captures all the children who are struggling, even those whose struggles may not be apparent.

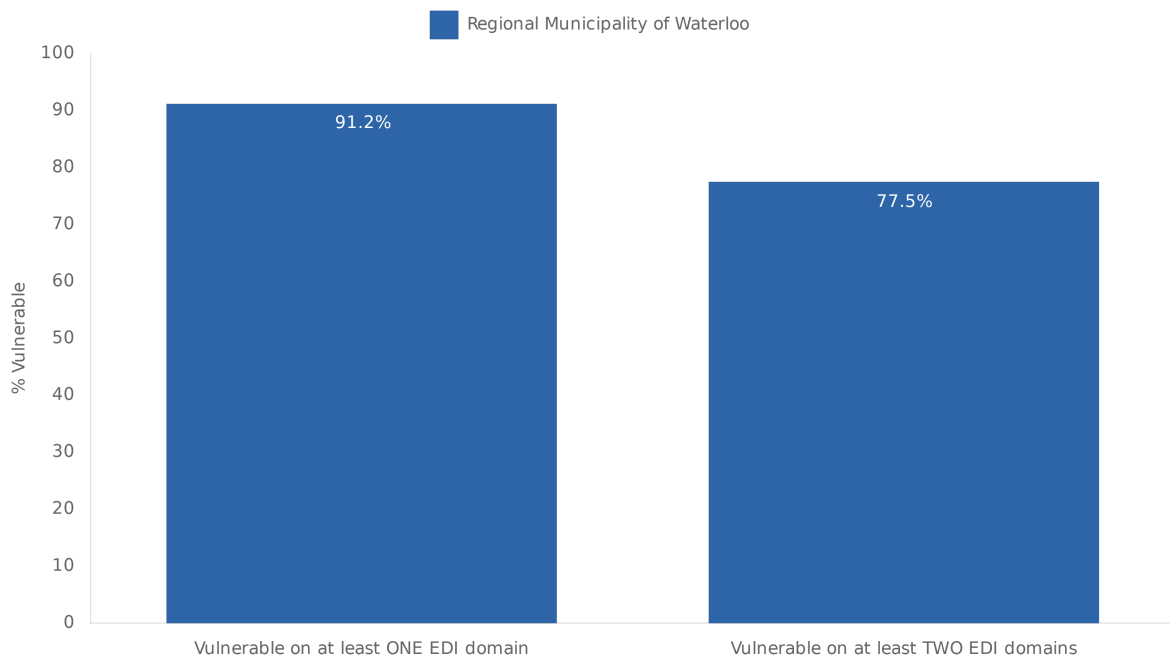
"Vulnerable" describes the children whose scores fall below the 10th percentile cut-off of the Ontario baseline population on any of the five domains. Higher vulnerability indicates that a greater percentage of children are struggling. A comparison group is not provided because the composition of the special needs group in each individual site may not be reflective of the province-wide group of children with special needs.

Percentage of Children with SN Vulnerable by Domain



The graph below illustrates the Regional Municipality of Waterloo 2022/2023 results for the percentage of children with special needs vulnerable on at least one and at least two domains.

Percentage of Children with SN Vulnerable



## Section D – Special Concerns

Note: the following chart ONLY includes children who have Special Needs.

### Special Concerns

Minimum: 0  
Maximum: 11

- physical disability
- visual impairment
- hearing impairment
- speech impairment
- learning disability
- emotional problem
- behavioural problem
- home / environment problems
- chronic medical/health problems
- unaddressed dental needs
- other

### Special Skills

Minimum: 0  
Maximum: 7

- Demonstrates special numeracy skills or talents
- Demonstrates special literacy skills or talents
- Demonstrates special skills or talents in art
- Demonstrates special skills or talents in music
- Demonstrates special skills or talents in athletics/dance
- Demonstrates special skills or talents in problem solving in a creative way
- Demonstrates special skills or talents in other areas

Special Concerns	Yes, Observed		Yes, Parent Info/Diagnosis		Yes, Both	
	Number	%	Number	%	Number	%
<b>88.9% (423)</b> Yes						
Physical Disability	15	3.2%	12	2.5%	27	5.7%
Visual Impairment	8	1.7%	8	1.7%	9	1.9%
Hearing Impairment	3	0.6%	5	1.1%	6	1.3%
Speech Impairment	61	12.8%	35	7.4%	122	25.6%
Learning Disability	67	14.1%	27	5.7%	89	18.7%
Emotional Problem	86	18.1%	12	2.5%	44	9.2%
Behavioural Problem	100	21.0%	22	4.6%	79	16.6%
Home / Environment Problems	31	6.5%	13	2.7%	12	2.5%
Chronic Medical / Health Problems	11	2.3%	15	3.2%	21	4.4%
Unaddressed Dental Needs	7	1.5%	4	0.8%	2	0.4%
Other	26	5.5%	22	4.6%	37	7.8%

	Yes		No		Missing	
	Number	%	Number	%	Number	%
Child Receiving School Based Support	325	68.3%	148	31.1%	3	0.6%
Child Currently Receiving Further Assessment	180	37.8%	244	51.3%	52	10.9%
Child Currently on Wait List to Receive Further Assessment	122	25.6%	265	55.7%	89	18.7%
Child Needs Further Assessment	258	54.2%	181	38.0%	37	7.8%

Children with 1+ Special Skills **27.3%**

Children with 1+ Special Concerns **90.3%**



## Glossary

**Developmental health:** The full range of developmental outcomes, including physical and mental health, behavioural adjustment, literacy, mathematics achievement, and more.

**Special Needs:** Children identified as needing special assistance in the classroom due to chronic medical, physical, or mental disabling conditions.

**On track:** The total group of children with scores above the 25th percentile of the distribution.

**At risk:** The total group of children with scores between the 10th and 25th percentiles of the distribution.

**Vulnerable:** The total group of children with scores below the 10th percentile cut-off of the distribution.

**French Immersion:** Only for Anglophone communities; a program in which kindergarten students are introduced early to French language through immersion, however, the main language of the schools remains to be English.

**Domains:** The EDI measures children's developmental health across five domains:

- 1. Physical Health & Well-Being - 13 questions**  
Children are healthy, independent, and rested each day.
- 2. Social Competence - 26 questions**  
Children play and get along with others, share, and show self-confidence.
- 3. Emotional Maturity - 30 questions**  
Children can concentrate on tasks, help others, show patience, and are not often aggressive or angry.
- 4. Language & Cognitive Development - 26 questions**  
Children are interested in reading and writing, can count, and recognize numbers and shapes.
- 5. Communication Skills & General Knowledge - 8 questions**  
Children can tell a story and communicate with adults and other children.

**Ontario baseline:** The first provincial EDI collection in Ontario from 2004-2006. Used as a reference for all subsequent EDI collections in Ontario. Vulnerability is based on cut-offs calculated on data from this population.

**Ontario Cycle VI:** The sixth provincial collection that took place during the 2022-2023 school year. 70 of 75 school boards across Ontario participated in the Ontario Cycle VI collection.

**Subdomains:** Each of the five EDI domains is comprised of subdomains that measure a more specific area of development. There are 16 subdomains in total. Children are rated as 'meeting few/no developmental expectations', 'meeting some developmental expectations', and 'meeting all/almost all developmental expectations' on each subdomain.

**Missing:** Question not answered by teachers.

**Interpretation Guide:** Can be found here <https://edi-offordcentre.s3.amazonaws.com/uploads/2019/03/EDI-interpretation-toolkit.pdf>



**Tel:** (905) 525-9140  
General Inquiries: ext. 21469  
**Fax:** (905) 574-6665

**Email:** [edisrl@mcmaster.ca](mailto:edisrl@mcmaster.ca)  
[www.edi.offordcentre.com](http://www.edi.offordcentre.com)

**Mailing Address**  
McMaster University  
1280 Main St. W.  
Hamilton, Ontario L8S 4K1