

Scoliosis Care in Canada

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WHAT IS SCOLIOSIS?

Definition

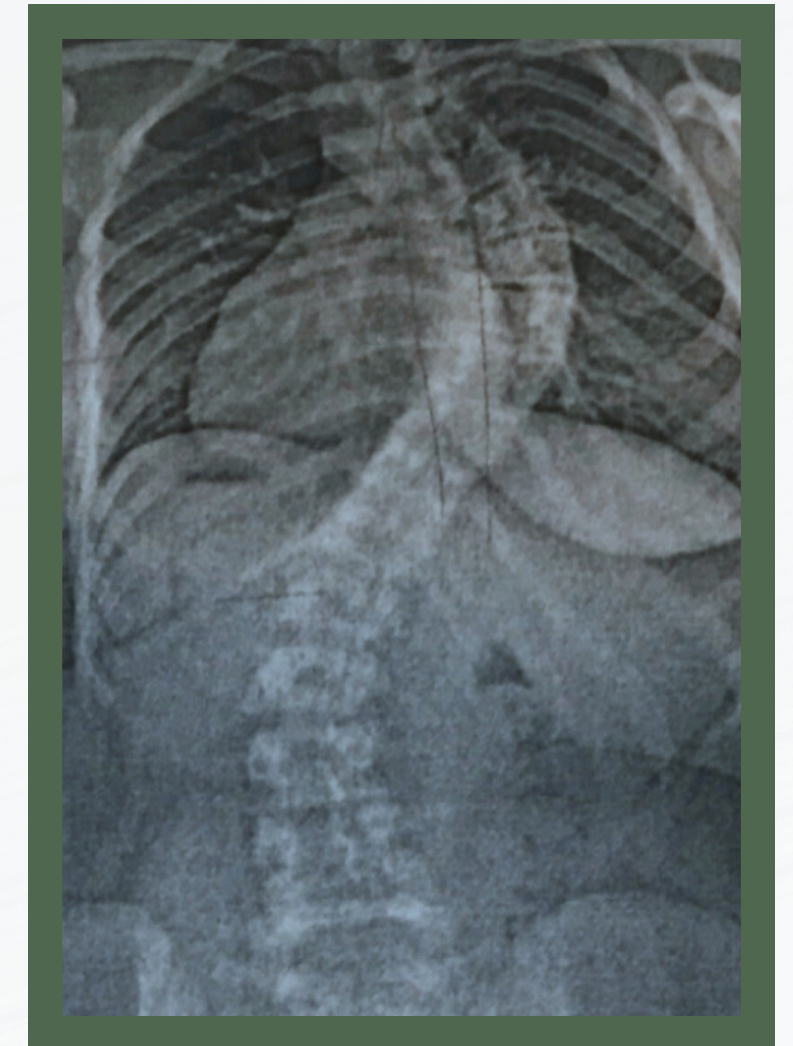
Scoliosis is the abnormal curvature and rotation of the spine.

Types

There are 3 main types of Scoliosis. The most common is Idiopathic scoliosis. This type has no known cause. The other two types are congenital and neuromuscular.

Signs

Physical signs of Scoliosis include rotation and misalignment of the ribs, shoulders, and hips. The curve of the spine can be C-shaped or S-shaped.



**SCOLIOSIS
TYPICALLY
DEVELOPS
DURING
ADOLESCENCE**



**Around
10-16
Years Old**

(SickKids Staff, 2020)



2-3%

of the adolescent population of Canada
have been diagnosed with scoliosis
(Thérout et al., 2013)

120,000 — 180,000

Adolescents of Canada's 6 million population will be
diagnosed with scoliosis
(Thérout et al., 2013)

32% of patients

are diagnosed late
(Beauséjour, 2007)

**Scoliosis Health Care Promotion needs to be
targeted to help adolescences in Canada,
especially girls.**

**"IDIOPATHIC SCOLIOSIS OCCURS TEN
TIMES MORE OFTEN IN GIRLS THAN IT
DOES IN BOYS OVER THE AGE OF 10."**

-American Academy of Orthopaedic Surgeons

(UPMC Health Beat, 2017)

**GIRLS ARE ALSO MORE LIKELY TO
DEVELOP MORE SEVERE CURVES.**

(UPMC Health Beat, 2017)

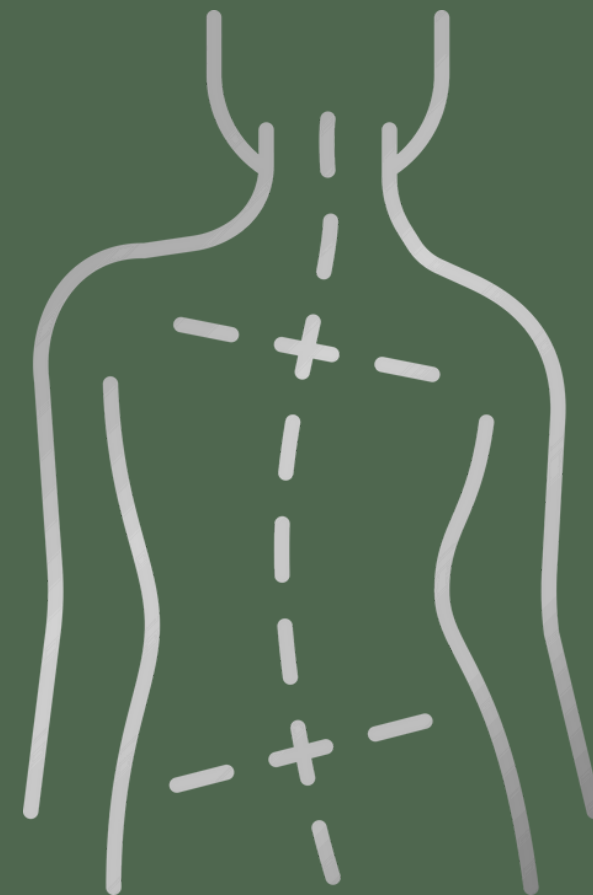
**10X
MORE LIKELY**



Signs of Scoliosis

Uneven
Shoulders and
hips

Unequal
Arm to
Body Gap



Rib
Rotation

Prominent
Shoulder
Blade

Externally Evident
Curved
Spine

TREATMENT OPTIONS

PSSE

PSSE is Physiotherapeutic Scoliosis Specific Exercises. These Physiotherapy techniques use breath, elongation, and rotation to halt the progression of the curve.

Research shows PSSE is effective for reducing curves, pain, self-image, and mental health

(Ma et al. 2023)

BRACING

Custom back braces are made to hold the spine in the corrective position, to decrease the risk of the spinal curve progression.

(SickKids, 2022)

Research shows bracing is effective treatment for 75% of patients

(Boston Children's Hospital, n.d.)

SURGERY

There are multiple options for surgery for Scoliosis. The most common surgery is a spinal fusion. While this can be a very effective method, it is a more invasive and higher risk treatment option.

Research shows surgery is 85% effective for large curves

(Moazzaz, n.d.)

Progression of Treatment

SCREEN AND OBSERVE

For curves less than 25° in a person who has stopped growing.

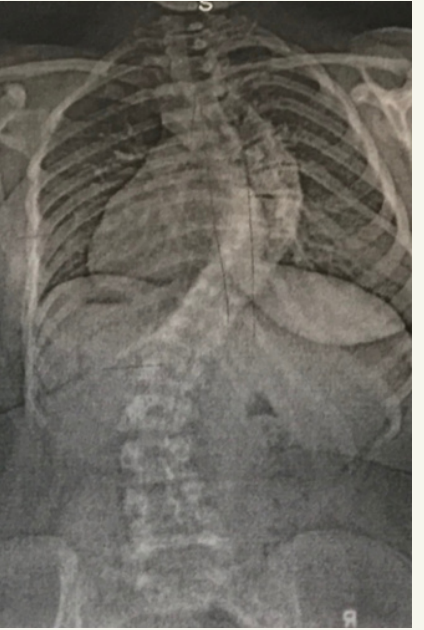
BRACING AND PHYSIOTHERAPY

For curves less than 45° – 50° in a person who is still growing.

SURGERY

For curves greater than 50° . There are different surgical options based on the growth status of the patient

With late detection, comes the increased likelihood that the curve has progressed to be at a point where only invasive treatment options are available. Highlighting the importance of **SCREENING!!!**



SCREENING

- Screening for scoliosis includes a 30 second test called the Adam's Forward Bend Test, in which the patient bends towards their toes and the back is examined.
- Up until 1997, Scoliosis screening was done in the school setting, as it was an optimal setting for children who are the most at risk to be screened (Adobor, 2011).
- Scoliosis Screening is still completed in school across the world!

THE CANADIAN PREVENTIVE HEALTHCARE TASK FORCE THEN DISCONTINUED IT DUE TO MULTIPLE REASONS, SUCH AS ...

Research

THERE WAS NOT ENOUGH EVIDENCE THAT EARLY DETECTION COULD PROMOTE BETTER OUTCOMES AND LESS INVASIVE TREATMENT OPTIONS.

- Since the 1980s, the research has now shown the effectiveness of PSSE and Bracing and the importance of early detection.

Cost

THERE WAS WORRIES ABOUT THE COSTS OF SCREENING FOR THE GOVERNMENT

- The financial burden that not having screening has caused on the government is abundantly more than the cost to screen (more on this soon). There are also definite ways to mitigate the costs such as having the nurse who hired to administer the vaccines, could also do a 30-second Adam's forward bend test.



Radtion

THERE ARE WORRIES ABOUT THE POSSIBLE OVEREXPOSURE TO RADIATION THROUGH X-RAYS.

- Due to the fundraising work of many volunteers, major hospitals such as Sick Kids and CHEO (children's hospital of Eastern Ontario) now have EOS (low radiation) X-ray machines.



False
+

THERE ARE WORRIES ABOUT THE FALSE POSITIVES.

- There was a worry that individuals were being referred for a more formal screening to their family doctor when the conditions were not severe enough to warrant treatment at the time of diagnosis. While this inconvenience may affect a few, it can also be life-changing for many to not receive screening.



Method
of
test



UNCOMFORTABLE TEST

- The Adams Forward Bend Test, includes bending over towards one's toes while another person checks (with eyes or scoliometer) for rotation in the spine. It is a very simple and quick test but it can feel uncomfortable having to bend over.

(La Grassa, 2023)

Healthcare Costs

Surgery
Bracing
PSSE



Increases Costs for
Healthcare System

A current issue in Scoliosis Health Care is the long waitlist for surgery, with many waiting over 2 years. Due to the long waits, more patients are at risk for complications. These delays are estimated to cost the healthcare system **\$44.6 million.**

(The Conference Board of Canada, 2023).

Reinstating screening in Canada can reduce the waitlist as more people being screened early, can allow for more treatment options to be available, and therefore fewer people waiting for surgery. Not only is this better for the patients but also for the health care system.

Prevention Strategies Summary



Primary

Education on scoliosis and the importance of screening for scoliosis for Healthcare Professionals



Primary

Education on scoliosis screening should be provided to patients, parents, teachers, and anyone who interacts with children



Secondary

Screening Protocols at Family Doctors



Secondary

Screening reinstated at schools

Education on the importance of screening for scoliosis for Healthcare Professionals

Primary Prevention

To prevent Scoliosis progression in today's youth, Education needs to start with the professionals. Healthcare Professionals, such as doctors, nurses, massage therapist, chiropractor, physiotherapist can often be the first contact with many people who may unknowingly have scoliosis. Having knowledge on scoliosis, how to screen, and the treatment options can improve their patients future quality of life.

- The amount of information even to professional in the health care field on Scoliosis is limited.
- Many professionals, such as physiotherapists and chiropractor do more harm then good when they are treating scoliosis patients as they were not given a full education on how to treat scoliosis.
- Education can come from pushes in the health care system for changes in Scoliosis education.

Your Part in Prevention

- Joining awareness support groups
- Spreading Awareness in our communities
 - Such as joining the Ottawa Annual Scoliosis Awareness walk
- Petitioning for change
- Make the professionals in your life aware that there are programs to teach the basics of scoliosis and its treatment.
- The Scoliosis Physiotherapy & Posture Centre (In Ottawa) offers a DO NO HARM course to educate professionals on Scoliosis.



Screening Education for Patients, Parents, and Teachers

Primary Prevention

To prevent Scoliosis progression in today's youth, Parents and adults working with children need to be educated on how to see the signs of scoliosis and how to screen and find screening near them.

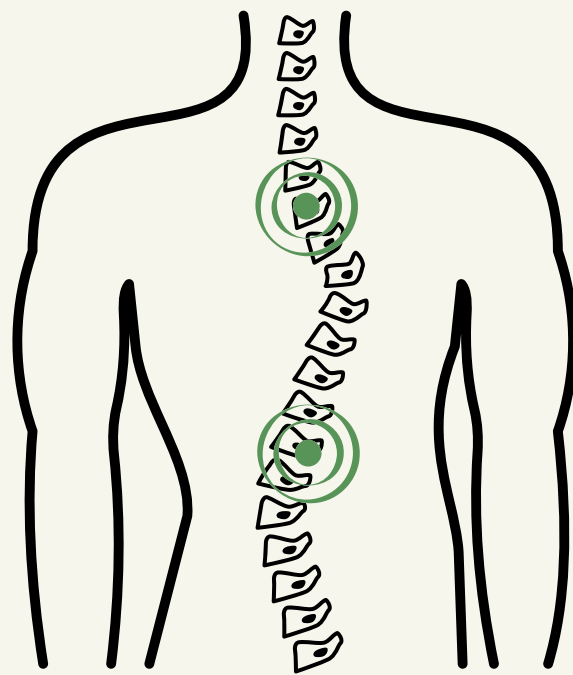
- To Screen for Scoliosis involves a 30 second test, in which the child bends to touch their toes, the adult can look at the spine and see if they see a Rib Hump.
- The easiest way to reach the target population is through schools.
- School Boards should be sent pamphlets Detailing scoliosis and the screening procedure. These can be given out to students, Parents, and teachers.

Your Part in Prevention

- Another way this can be accomplished is if you take a stand in educating the parents and people around you! You have the ability to help prevent a child from having to undergo invasive treatment.
- Performing the Adam's Forward Bend Test on your siblings, cousins, and friends is a quick and harmless way to prevent the progress of severe scoliosis.

SCREENING AT ANNUAL PHYSICAL FAMILY PHYSICIAN'S APPOINTMENTS

Secondary Prevention



- PHYSICIANS ARE NOT REQUIRED TO SCREEN FOR SCOLIOSIS.
- BY ADDING SCOLIOSIS SCREENING TO THE NORMAL ROUTINE OF PHYSICALS FOR TEENAGERS, CAN REDUCE THE CHANCE OF LATE DIAGNOSIS. ONCE AGAIN, LATE DIAGNOSIS LEADS TO INVASIVE TREATMENT OPTIONS BEING THE ONLY OPTIONS AVAILABLE.

Your Part in Prevention

- Ask your doctor to screen you for scoliosis.
- Have your family members ask to be screened in their appointments.
- Join an awareness group and join the fight to get scoliosis screening established as a necessary test.
- Send your government officials letters of the importance of screening.

REINSTATING SCHOOL SCREENING

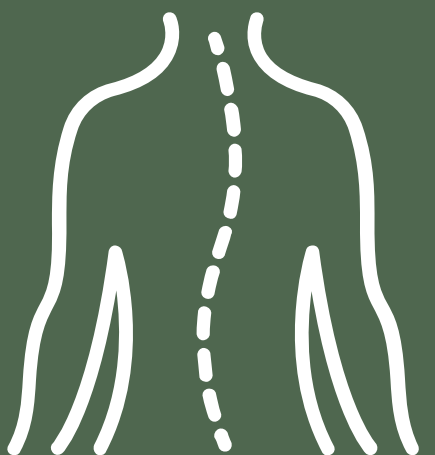
Secondary Prevention

Since School Screening was discontinued in Canada in 1979, the research has been updated and shows the importance of early detection and the treatment available when scoliosis is detected early.

Some Examples of the current Research are:

- Seleviciene's (2022) study on the effectiveness of PSSE.
- Weinstein's (2013) BrAIST study on the effectiveness of Bracing.

- Protocols are already in place in the school board for getting information to parents from the school. When non-related school questionnaires are going to be given to the students, the parents receive a phone call days prior to aware them of the questionnaire and get consent. This could be done for scoliosis screening. Parents will be given a call a week prior to receive consent.
- When the nurses come into the schools to give the vaccines, children who are at the highest risk age groups could be screened using the 30 second Adam Forward Bend test.
- Screening is a crucial component of healthcare that should be implemented either at the doctor's office or in schools.



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