



Facilitator Guide for Teachers and Educators

Human Development and Sexual Health: Reproductive System Review (Grades 9-12)

Introduction

This module provides educators who teach students in grades 9 to 12 with a lesson on the reproductive system, conception, the menstrual cycle, and spermatogenesis. The module supports the learning objectives of The Health & Physical Education Ontario Curriculum.

Learning objectives

By the end of this presentation students will be able to better understand:

- Reproductive anatomy
- Spermatogenesis
- Conception
- Menstrual cycle

Purpose

Improving and protecting the health and well-being of school-aged children and youth is a priority for Ontario's public health sector. Childhood is a time when health practices and behaviours are learned, and adolescence is a period when both positive health behaviours and risk behaviours can be adopted. Because curriculum for the school year may be delivered at various times by different educators, this guide allows the educator to deliver self-paced content related to human development and sexual health in the classroom at their convenience. Depending on the level of discussion, student engagement, and the preferences of the educator, the length of this presentation can vary from approximately 30- 60 minutes. Please ensure familiarization of the content prior to teaching to ensure there is sufficient time within classroom hours.



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About this guide

This guide is intended as a supplemental resource for educators who choose to deliver the health modules developed by Ottawa Public Health (OPH). As content is updated annually and/or when new evidence emerges, we encourage educators to frequently check back on the [School Health Online](#) webpage to access the most up-to-date content.

Additional resources

For more information on sexual health, available services and resources please visit the following:

- [School Health Online](#)
- [OPH - Sexual Health](#)
- [The Link Ottawa](#)

Disclaimer

The information provided is not a substitute for professional medical advice. Educators should encourage students to consult their parents or guardians, and/or qualified healthcare professionals for personal guidance related to sexual health. Educators should approach questions about sexual health with sensitivity, respect, and an understanding of the diverse backgrounds and perspectives of their students. When responding to a student question, the response should be adapted to reflect the age and maturity of the student as well as the classroom environment and individual school policies.

Considerations

Becoming informed about a topic prior to discussing it in a classroom setting, will help create a productive and comfortable conversation with youth. This module includes topics that some students may find uncomfortable and/or difficult to understand. Here are some considerations to support the students' learning experience:

- Be sensitive to different backgrounds and experiences.



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- As much as possible, be aware of experiences in your students' lives that may make certain discussions uncomfortable for them. Consider letting students know ahead of time that the topic will be discussed in class and use proper judgment if accommodations are needed.
- Watch for signs of discomfort.
 - Monitor students' faces and body language.
- Allow ample time for discussion.
 - Allow enough time to introduce the topic, discuss as a group, summarize, and answer questions.
 - Using an anonymous "question box" may encourage students to ask questions they otherwise would not feel comfortable asking in front of the class.

Continued collaboration

Our commitment to improving health outcomes is an ongoing journey*. We encourage you to share feedback and suggestions for improvement on this module, using our feedback form found on our [School Health Online](#) webpage. Together, we can continuously refine our resources to better the evolving needs of our school communities.

**Last updated: October 2023*

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Module

<p>Slide 1</p>	<p>Please use as suggestions only:</p> <p>Prior to beginning this module, it can be helpful to include a statement such as: "I know this can be a sensitive topic and can make people feel uncomfortable." Let your students know that you are not uncomfortable, and that this is such an important topic to start talking about even before youth may have started thinking about sexuality. Reinforce that this is a safe space where students can learn about their bodies and health to be better able to make informed decisions for themselves.</p> <p>Ground rules: Review classroom etiquette or establish ground rules together as a group, prior to this lesson.</p> <p><u>Some examples:</u></p>
<p>Slide 2</p> <p>Before we start...</p> <p>Let's cover some ground rules!</p> <p>*Reminder that support is always available at school. Other community resources will be shared at the end of the module.</p> <p>OttawaPublicHealth.ca/SchoolHealthOnline</p>	<ul style="list-style-type: none"> • Refraining from discussing personal situations or stories; however, students are encouraged to speak to their teacher privately if they would like to discuss a topic further. • Respecting all beliefs and cultural values. <ul style="list-style-type: none"> ○ Cultural sensitivity: People's decisions and behaviours related to sexual relations are influenced by their cultural beliefs, values and practices. It is important to acknowledge our own personal cultural values and beliefs while respecting that others may not share the same ones. • Using inclusive language and proper terminology. • Welcoming all questions. • Listening attentively. • Helping create a safe space for students – an environment of respect and sensitivity. • Keeping classroom discussions confidential. <p>Let students know that support on sensitive topics is always available within the school community and through external partnerships. Supports are reviewed at the end of the presentation.</p>

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	<p>Inclusive language: Inclusive language is used to include individuals of all genders and sexual orientation. Using inclusive language provides a safe space for students, as well as a respectful, caring and welcoming environment.</p> <p>It is also important to note and share with students that during the lessons, when the female and male anatomy are discussed, they are discussed from a biological stand-point meaning sex assignment at birth. However, it is important to point out to students that for some people, their assigned sex does not match their gender expression and experience and that is okay. The information outlined in this presentation is intended to educate students on the functions of the human body and provide them with valuable knowledge to make healthy and safe choices in their lives.</p> <p>Note to educator: When talking about body parts, emphasize physiology instead of gender. Referring to “bodies with a penis and testicles” or “bodies with a vulva and ovaries” is more accurate and inclusive than referring to boys or girls. It may be useful to show diagrams of the external genitals if students do not know the words “vulva” or “penis”. For example, rather than saying “Girls will go through menstruation”, educators could refer to a diagram of the reproductive system and explain that “For those who have ovaries, menstruation usually begins between the ages of 8-18”.</p> <p>For more information on teaching in a gender inclusive way, refer to the “Principles of Gender Inclusive Puberty and Health Education”.</p>
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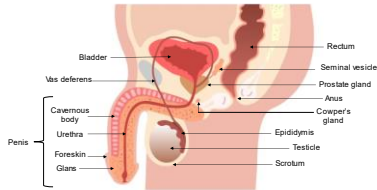
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<p>Slide 3</p> <p>Introduction</p> <ul style="list-style-type: none"> ■ Reproductive anatomy ■ Spermatogenesis ■ Conception ■ Menstrual cycle <p>Welcome!</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>Topics covered in this module include:</p> <ul style="list-style-type: none"> • Reproductive anatomy • Spermatogenesis • Conception • Menstrual cycle
<p>Slide 4</p> <p>Assigned male at birth External genitalia</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>Describe each part of the body and its role:</p> <p>Testicles: glands that produce and store sperm</p> <p>Penis: external organ used for sexual pleasure and for ejaculation of semen - also used to urinate</p>

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Slide 5

Assigned male at birth
Reproductive system



Description of each part of the body and its role:

Bladder: the organ that contains urine

Urethra: the tube that carries urine from the bladder to the outside of the body; also carries semen, but not at the same time

Penis: external organ used for sexual pleasure and for the ejaculation of semen; also used to urinate

Penis glans: rounded head of the penis that is exposed when the penis is circumcised or erect

Foreskin: layer of skin that covers the glans (uncircumcised) that can be retracted to expose the glans

Cavernous body: erectile tissue that forms the body of the penis; swells with blood to create an erection

Rectum: last part of the intestines that contains stool before it is removed from the body

Anus: sphincter attached to the rectum that passes stool or fecal matter from the body

Testicles: glands that produce and store sperm

Epididymis: coiled segment where sperm is stored, matures, and is transported from the testes to the vas deferens

Vas deferens: tube that carries sperm from the testes to the urethra; sperm becomes mixed with secretions along the way and forms semen

Scrotum: pocket of skin that contains the testes, epididymis, and vas deferens

Seminal vesicle: provides the semen with clear liquid mucus with a high sugar content

Prostate: reproductive gland shaped like a walnut; creates a thick white fluid rich in protein which mixes with semen

Cowper's gland: releases fluid that mixes with semen

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Slide 6

Sperm production & ejaculation



■ Sperm production begins at the onset of puberty.



■ The first sign that an individual can reproduce is having an erection that produces ejaculation.

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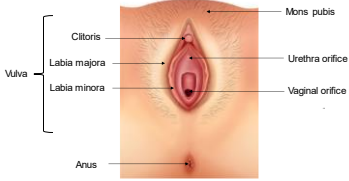
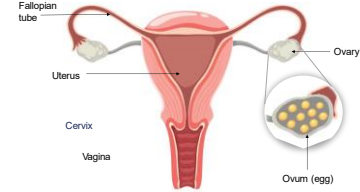
Sperm production

- Sperm production begins at the onset of puberty (around age 13).
- The testicles are responsible for making millions of sperm.
- The scrotum is used to protect the testicles by hardening to keep the testicles closer to the body or softening to move them away from the body, so that their temperature is 3°C lower than the rest of the body. This then keeps the testicles at the right temperature for sperm production.
- Sperm passes through the epididymis from the testicles and are stored here for about 20 days until they mature.

Ejaculation

- The first sign that an individual can reproduce is having an erection that produces ejaculation.
- Ejaculation is a release of sperm and other liquids from inside the male reproductive tract that comes out through the penis.
- The process of ejaculation first begins with sexual arousal.
- The penis becomes hard and rises. The penis also becomes larger and longer.
- This is called an erection. **(Image on the bottom left)**
- During ejaculation, the vas deferens carries the sperm to the urethra and the sperm becomes mixed with secretions along the way and forms semen.
- Along the sperm's journey to the urethra, the prostate gland produces a white fluid rich in protein to help nourish semen outside of the body.
- Sperm also make a pitstop to the seminal vesicle, which lies behind the bladder and produces secretions that make up 60% of semen, and this thick fluid nourishes the sperm.
- During ejaculation, the prostate gland enlarges to block urine from leaving the bladder.

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<p>Slide 7</p> <p>Assigned female at birth External genitalia</p>  <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>Describe each part of the body and its role:</p> <p>Vulva: includes the labia minora and labia majora; often mistakenly called the vagina when, in fact, the vagina is the canal that runs from the opening of the vagina to the cervix</p> <p>Clitoris: most sensitive part of the vulva and provides sexual pleasure</p> <p>Labia majora: outer fold of skin that functions to protect the opening of the urethra and the vagina</p> <p>Labia minora: inner fold of skin that functions to protect the opening of the urethra and the vagina</p> <p>Urethral orifice: opening that leads to the urethra and where urine exits the body</p> <p>Vaginal orifice: opening that leads to the vaginal canal; thin membrane called the hymen surrounds the opening of the vagina that varies from person to person and usually erodes over time</p> <p>Anus: sphincter attached to the rectum that passes stool or fecal matter from the body.</p>
<p>Slide 8</p> <p>Assigned female at birth Reproductive system</p>  <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>Describe each part of the body and its role:</p> <p>Ovary: reproductive gland the size and shape of an almond that produces eggs and hormones (estrogen and progesterone)</p> <p>Fallopian tube: tubes that carry the egg from the ovary to the uterus, where it can be fertilized by a sperm</p> <p>Uterus: pear-shaped organ in the lower abdomen; it grows to allow the fetus to develop</p> <p>Cervix: the lower, narrow part of the uterus; it forms a duct that opens into the vagina</p> <p>Vagina: muscular canal that runs from the cervix to the outside of the body; it is used for sexual pleasure or to give birth to a child</p>

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<p>Slide 9</p> <p>Conception Sperm transport</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>①</p> <p>Conception: A pregnancy, which is the development of a baby in the uterus, can occur when sperm is ejaculated into the vagina, and the sperm and egg connect. Babies can also be conceived by having the sperm and egg connect using assisted reproductive technologies.</p> <p><u>Sperm transport</u></p> <ul style="list-style-type: none"> • Sperm (semen) leaves the penis and enters the vagina. • If semen gets into the vagina, the sperm cells will swim up through the vaginal canal, through the cervix, and towards the fallopian tubes. • Sperm can live up to six days, waiting to join with an egg, before they die.
<p>Slide10</p> <p>Conception Egg transport</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p>②</p> <p><u>Egg transport</u></p> <ul style="list-style-type: none"> • About halfway through the menstrual cycle, the ovaries release a mature egg from its sac (the corpus luteum) into the fallopian tube — this is called ovulation. • The egg travels from the ovary down one of the fallopian tubes (towards the uterus) where it will wait for a sperm cell, and can survive for up to 24 hours. Fertilization may take place if sperm are present.



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<p>Slide 11</p> <p>Conception Fertilization</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>Fertilization</u></p> <ul style="list-style-type: none"> • When one sperm meets one egg and they join together, they begin to develop into what is called an embryo. This is the process of fertilization. • Fertilization usually takes place in a fallopian tube. • The embryo then continues to develop and travels down the fallopian tube and into the uterus.
<p>Slide 12</p> <p>Conception Implantation</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>Implantation</u></p> <ul style="list-style-type: none"> • If the embryo attaches to the lining of the uterus, this is called implementation. This is when pregnancy officially begins. • When the embryo implants in the uterus, the body releases pregnancy hormones that prevent the lining of the uterus from shedding. This is why people do not get their period while pregnant. • This lining is filled with nutrients and provides support to the developing and growing embryo. <p>As weeks pass, the embryo develops into a fetus which continues to grow in the uterus and the pregnancy usually lasts just over 9 months.</p> <p>There are many reasons why some individuals are unable to conceive a baby on their own (infertility, single parents, same-sex couples). Assisted human reproduction can help these individuals build their families.</p> <p>Additional ways of conceiving: Some examples using assisted human reproduction include:</p>

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	<ul style="list-style-type: none"> • Artificial insemination: The partner’s own semen or donor semen is inserted into the vagina or cervix. • Intrauterine insemination: The sperm is placed into the uterus. • In-vitro fertilization (IVF): An egg is fertilized outside of the body in a lab and is then placed in the uterus. • Ovarian stimulation: Medications are used to induce ovulation in women who are not ovulating.
<p>Slide 13</p> <p style="font-size: small;">OttawaPublicHealth.ca/SchoolHealthOnline</p>	<p>Many changes happen during puberty. One of the changes that occurs for people who have a uterus, is menstruation. Menstruation is also called a period and is part of the menstrual cycle, which is controlled by hormones in the body.</p> <p>General information on menstruation that can be discussed prior to explaining the menstrual cycle.</p> <ul style="list-style-type: none"> • The medical term for <i>getting periods</i> is menstruation or “menses”. • Having periods is a sign of fertility, meaning someone can get pregnant if they have sex. • Periods usually start between the ages of 8 and 18 and last until menopause. • Periods may be irregular for the first few years, as it can take time for the body to adjust. Eventually, it will settle into a schedule and periods will become more regular. It is important to note, however, that some individuals will continue to experience irregular periods, and this is normal. If someone has concerns, they should seek advice from a health care professional. • Periods generally last between 3-6 days. <p>The menstrual cycle</p> <p>The menstrual cycle is the body’s way of preparing for a possible pregnancy every month, which is the process of growing a baby. When a pregnancy does not happen, a monthly period will occur. Just</p>

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	<p>because someone’s reproductive system is physically able to grow a baby, does not mean they are ready to have a baby.</p> <p>There are four stages to the menstrual cycle that will be discussed in the next slides.</p>
<p>Slide 14</p> <p>Menstrual cycle Menstruation</p>  <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>1st stage: Menstruation</u></p> <p>The 1st day of the menstrual cycle starts on the 1st day of the period. The period happens when the egg does not get fertilized by a sperm. The uterus does not need the lining of extra blood and tissue to grow a pregnancy, so it sheds the lining out of the vagina as menstrual blood. The unfertilized egg (ovum) is also shed. The egg is not visible to the naked eye.</p>
<p>Slide 15</p> <p>Menstrual cycle Follicular stage</p>  <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>2nd stage: Follicular</u></p> <p>After the period ends, the uterine wall begins to thicken again due to increasing hormone levels, to prepare for pregnancy. If a person becomes pregnant, this nutrient rich lining provides support to the developing embryo. About a week after the period ends, one of the eggs matures in the ovaries. The body is getting ready to release an egg. Fun fact: At birth, ovaries have an average of 400,000 immature eggs in them. Only 300 to 500 of these eggs will be released during menstrual cycles during their lifetime.</p>

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<p>Slide 16</p> <p>Menstrual cycle Ovulation</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>3rd stage: Ovulation</u></p> <p>About halfway through the menstrual cycle, one of the matured eggs will be released from an ovary – This is called ovulation.</p> <p>As the mature egg is released from the ovary, the egg travels from the ovary down one of the fallopian tubes and towards the uterus where fertilization may take place, if sperm are present. It will wait for a sperm cell up to 24 hours.</p> <p>If the egg is not fertilized, it disintegrates within 24 hours.</p> <p>Ovulation generally occurs on day 14 of the menstrual cycle, but ovulation is influenced by many factors, and has been known to occur any time during the cycle, even during the menstrual period. Lining of the uterus continues to get thicker.</p>
<p>Slide 17</p> <p>Menstrual cycle Luteal stage</p> <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	<p><u>Stage 4: Luteal Stage</u></p> <p>Because the egg was not met by a sperm the body will realize that there is no pregnancy. The corpus luteum breaks down which certain hormone levels to drop. This signals the uterine lining to break down, and therefore the cycle returns to stage one and a new menstrual cycle begins.</p> <p>The cycle repeats itself monthly, or every 21-35 days.</p>

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Slide 18

Resources & services

■ Where do you find credible information on sexual health?

- The Link
 - Ottawa Public Health
- Community health clinic
- Primary health care provider and other health care professionals
- Walk-in clinic
- Sexual Health Clinic: 613 -234-4641
- Sexual Health Infoline Ontario: 1 -800-668-2437



OttawaPublicHealth.ca/SchoolHealthOnline

OPH clinics:

- **OPH Sexual Health Clinic: 179 Clarence St., Ottawa** – by appointment only. Youth will be prioritized for appointments.
- **Gay Men's Sexual Health Clinic: 179 Clarence St, Ottawa** – by appointment only
 - The clinic provides a wide range of sexual health programs and services for gay, bi, trans-men, and other men who have sex with men in the Ottawa area.

Other clinical settings:



- Students can visit a family physician, nurse practitioner, walk in medical clinic or University or College Health services as they provide STBBI testing, Pap tests and birth control. The Sexual Health Clinic does not provide faster results for STBBI testing than family physicians, nurse practitioners, or other clinics.

The Link Ottawa provides an overview on 'What to Expect at the Sexual Health Clinic' prior to a Sexual Health appointment including:

- How to prepare for the visit
- What occurs upon arrival
- The interview of the visit and assessment

The testing component and how to receive results

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<p>Questions? OPH wants you to protect yourself if you are sexually active. Need more information?</p> <p>➔</p> <p>Scan the QR code</p> <p>Free condoms available!</p>   <p><small>OttawaPublicHealth.ca/SchoolHealthOnline</small></p>	
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References:

The Link Ottawa: <https://www.thelinkottawa.ca>

Ottawa Public Health: <https://www.ottawapublichealth.ca>

Centers for Disease Control and Prevention: <https://www.cdc.gov>

The Society of Obstetricians and Gynaecologists of Canada (SOGC): <https://www.pregnancyinfo.ca>

Planned Parenthood: <https://www.plannedparenthood.org>

Alberta Health Services: <https://teachingsexualhealth.ca/>

UCSF Health: <https://www.ucsfhealth.org/>

Niagara Region: <https://www.niagararegion.ca/health/schools/default.aspx>