

Core knowledge content

Puberty

There are three periods of rapid growth: conception to birth, birth to the 1st birthday and puberty. Puberty is the stage of development when a person is in the process of changing from a child to an adult. These changes include physical changes, emotional changes and social changes. When a person's body is ready to begin puberty, the pituitary gland (which is located at the bottom of the brain) sends out chemical messages, called hormones, to get things started. These hormones travel in the blood stream to different parts of the body.

In people who are assigned female at birth, the hormones target glands called ovaries and in people who are assigned male at birth, they target glands called testicles. Both of these glands signal to start making their own hormones. In females, the ovaries start making the hormones estrogen and progesterone. In males, the testicles start making a hormone called testosterone. Hormones travel in the blood stream and tell other parts of the body to start changing. They cause changes allowing children's bodies to grow into adult bodies. Puberty happens at different times. Similar to a "personal alarm clock", no two clocks are set exactly the same. According to teachingsexualhealth.ca, for people who are assigned female at birth usually experience puberty between 8-16 years and for people who are assigned male at birth usually change between 10-18 years. It is very common for females to be taller than males, especially during grades seven and eight. Someone who is at either end of the age range when they start puberty may feel either embarrassed, left out, teased or that something is wrong with them, this is common. The changes are generally complete by 18 for people who are assigned female at birth and 20 for people who are assigned male at birth.

Emotional, Social and Cognitive Changes

Some changes that occur during puberty you can see and others you cannot. Emotional, social and cognitive changes occur because of the changes that are happening to the brains of children. During puberty, the brain is constantly under construction. Construction won't be complete until the early twenties and these changes will result in emotional, social and cognitive changes as they mature.

Mental Health

It is common for individuals going through puberty to feel like they're on an "emotional rollercoaster", happy, positive and confident one minute, then sad/angry, withdrawn or nervous the next minute. Some individuals might also identify feelings of confusion, loneliness or excitement.

Students may feel more comfortable to reach out to friends first, but it is also recommended that individuals seek out credible information and talk to a trusted adult. There are different types of supports available to students: social supports (family, friends); school supports (counselors, teachers); and community supports (school nurses, health care providers, doctors, faith leaders, Kids Help Phone, etc.).

Physical Changes

Skin

The role of the skin is to provide protection from heat and cold as well as provide a barrier from infection.

Acne

The increase in hormones during puberty causes oil glands (sebaceous) to produce excess amounts of oil (sebum). There are a lot of oil glands on the face (especially across the forehead, nose, chin and "T-zone"), neck, shoulders, upper chest and back. This excess oil can combine with dead skin cells to clog pores, trap bacteria and cause pimples. Pimples happen to everyone. Blockages (plugs) exposed to air appear as blackheads whereas whiteheads are closed plugs that can become inflamed.

- Most people can reduce the severity of acne by following some basic hygiene steps:
- Wash face with mild soap or cleansers and warm water 2-3x daily
- If acne gets worse, the next option would be to try acne products (washes and creams) which can be purchased over the counter or talk to a doctor for a prescription
- Do not squeeze or pick at pimples as this can cause infection
- Avoid creams and cosmetics that contain oil
- Remove all cosmetics before going to bed
- Eat a well-balanced diet

- Drink water for thirst and milk/milk alternatives with meals
- Get regular physical activity
- Get sufficient sleep
- Wash hair more often
- Keep hair back off the face

Despite following these basic hygienic responsibilities, some people may need to seek treatment from their health care professional (family doctor, nurse practitioner or dermatologist). Usually, acne decreases with age.

Perspiration

People perspire (sweat) all the time, not just during physical activity. Perspiring is how the body regulates its temperature. As perspiration evaporates from the skin's surface, it cools the body. At puberty, a different set of sweat glands (apocrine glands) start to secrete a different substance along with a salty, watery solution. This in combination with bacteria on the skin then results in body odour. Major sweat glands are located in the underarms, groin area, palms of the hands and soles of feet.

- Strategies for minimizing body odour include:
- Bathe or shower daily
- Use deodorants or antiperspirants. Deodorants are designed to cover up the unpleasant odour where antiperspirants slow the sweating process.
- Do not substitute the use of body sprays, perfumes, colognes etc. for showers. If using these products it is important to use sparingly.
- Wear clean clothes
- Change socks and underwear daily or more often if physically active.

Soap Products

During puberty, skin can be sensitive to strong perfumed soaps or lotions. Use of a mild soap may be necessary. For people who experience difficulty with their skin and/or breakouts, medicated soaps and/or lotions may be prescribed by a health care professional.

Body Hair

During puberty hormones stimulate body hair to grow on the arms and under the arms, in the pubic area (area between legs) and on the legs. Hair can also grow on the chest, back and face, which is more common in people who produce testosterone.

Hair on head

Due to the increase of hormone production, hair may become oilier, (similar to skin). Regular shampooing and daily brushing/combing of hair is important.

Body hair

Increased hair growth during puberty is one change that individuals often find embarrassing. During puberty, children many grow hair on many different places, including their arms, legs, face, chest, back, and pubic area. Many females have been taught to remove the hair under their arms and on their legs, however this may not be everyone's practice, therefore it is important to take into consideration the different beliefs that people may have.

Voice Changes

The larynx, also known as the voice box, gets bigger during puberty. When a person who is assigned male reaches puberty, their body begins to make lots of testosterone, which causes the larynx to grow and the vocal cords become long and thick. When the larynx grows during puberty, it sticks out at the front of the throat. This is called an Adam's apple. Everyone's larynx grows during puberty, but a female's larynx doesn't grow as much as a male's does (most females don't have Adam's apples).

Change in body shape

Height: Genes largely determine how tall a person will be and how fast they will grow. Children could be concerned about their height for different reasons: it might be feeling too tall or feeling too short. But some really tall people might not like all that height and some shorter people might get tired of all the jokes or of feeling like they're staying little while their friends are growing.

Weight: People come in all different shapes and sizes, and the best weight is the one that is right for a child's body type and size. It can be unhealthy to be too thin or too heavy. Eating enough food is like putting gas in a car – if you run out of gas, it stops working!

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Everyone needs to eat a healthy, balanced diet to grow, to fight off infections, to do well in school to feel good. Eating a variety of healthy foods that meet the requirements of [Canada's Food Guide](#) is the best approach.

Muscles: Some children might wish they could be muscular like their favourite superhero or athlete. Some children talk about going to the gym or lifting weights to help them develop muscles. However, their bodies can't build these adult muscles until puberty is complete. This is because children are not fully developed yet (muscles and bones), and working out increases their risk of injury. People can however do a lot to build strong, healthy bodies by being physically active and eating a variety of nutritious foods. (Kids Health. *Getting muscles*. Retrieved from:

<https://kidshealth.org/en/kids/muscles.html?ref=search>)

Hips: A person who is assigned female at birth has pelvic bones that grow and shift during puberty, causing the hips to widen. This change helps to accommodate the growth of the internal reproductive system, but primarily prepares them for potential childbirth.

Other factors that influence good health

Other factors that influence good health are nutrition, physical activity, adequate sleep, oral health and choosing not to smoke (cigarettes or marijuana), vape or consume alcohol.

Supplemental Content

The supplemental information has been included to ensure that the teacher has all the information he/she may need to teach puberty classes. It is not mandatory to introduce students to the information found here but it may help the teacher answer some questions that may arise. Overall, it is most important to discuss the reproductive anatomy and functioning that will help students understand the changes of puberty.

Other Factors that Influence Health

Sun Exposure

Frequent sun exposure can cause skin cancer and premature aging.

- **Slip** on clothing to cover your arms and legs
- **Slap** on a wide-brimmed hat
- **Slop** on sunscreen with a minimum SPF 30
- **Seek** shade
- **Slide** on sunglasses that offer 100 per cent UVA and UVB protection
- Even on cloudy or overcast days it is important to apply sunscreen

Nutrition

What children put into their body is important for health. Eating a nutritious breakfast every day is a great start. Food choices throughout the day should mainly come from the vegetable and fruit food group of [Canada's Food Guide](#).

Physical activity

Physical activity plays an important role in the health, well-being and quality of life for children and youth. Habits formed early can last a lifetime. Physical activity doesn't only mean sports – it can include everyday things like walking the dog, playing tag, building a snowman, tobogganing, and even household chores like raking the leaves or vacuuming. Children aged 5-11 should accumulate at least 60 minutes of moderate to vigorous-intensity physical activity daily. In order for students to make the most of their physical activity, they should try to include vigorous activities at least three days per week. A great way to

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incorporate physical activity in the classroom is to use Daily Physical Activity (DPA) between learning blocks. For more information, visit [OPHEA's DPA Every Day resource](#).

Adequate sleep

A child's body functions best with a regular schedule which includes a regular sleep routine. Sleep is important as this is the time when the body relaxes, repairs itself, grows and gets ready for the next day. Having a relaxing, predictable bedtime routine helps the child settle into sleep mode. This should involve 20 to 30 minutes of quiet time that the child can use to engage in some wind-down activities such as reading, listening to music or writing in a journal. Stimulating activities such as playing videogames, using the computer, using cell phones or exercising an hour before bedtime should be discouraged. It is recommended that children ages 7-12 years of age get 9-11 hours of sleep each night.

Oral Health

Brushing teeth 2x/day, including the tongue is important. [The Niagara Region Public Health Dental Program](#) offers free programs and services to children and youth 17 years of age and younger. These services include dental screening; fluoride treatments; cleaning (scaling and polishing) as well as sealants.

Resources

Kids Help Phone. (visit <https://kidshelpphone.ca/> or call 1-800-668-6868)

Physical & Health Education Canada. Always Changing. (Retrieved from: <https://phecanada.ca/programs/always-changing/>.)

References

Alberta Health Services. Teaching Sexual Health. (Retrieved from: www.teachingsexualhealth.ca)

Kids Health. Getting muscles. (Retrieved from: <https://kidshealth.org/en/kids/muscles.html?ref=search>)

Society of Obstetricians and Gynaecologists of Canada, Sex & U. Puberty. (Retrieved from: <http://www.sexandu.ca/your-body/puberty/>)