

Acetaminophen is the generic name of the pharmaceutical product sold commercially under the brand names Atasol™, Tempra™, Tylenol™ and other private labels. Acetaminophen has analgesic (pain-reducing) and antipyretic (fever-preventing and fever-reducing) properties. It does not have anti-inflammatory properties. Although it is an over-the-counter medication, it must be used cautiously.

Under the *Educational Childcare Regulation* (chapter S-4.1.1, r. 2), acetaminophen may be administered without medical authorization to a child receiving childcare, provided it is administered in accordance with this Protocol and that a parent has given written consent. A parent must declare any known drug allergy to acetaminophen. If the child is allergic to acetaminophen, the childcare service may not administer it. The child's weight must be indicated in kilograms on the authorization form and revalidated at least every three months with the parents (whose initials are required).

A parent is not required to agree to the administration of the Protocol. However, if a parent does not sign the authorization form, acetaminophen may not be administered to the child unless the parent and a member of the Collège des médecins du Québec give written authorization.

BASIC RULES TO BE OBSERVED

Under this Protocol, acetaminophen may only be administered to relieve fever. It may not be administered:

- to children under 3 months of age (the presence of fever at that age requires a medical consultation);
- to relieve pain (the presence of pain requires a medical consultation);
- for more than 48 consecutive hours (2 days);
- to children who have received medication containing acetaminophen in the preceding 4 hours.

In these four instances, the Protocol does not apply and written medical and parental authorizations are required to administer acetaminophen.

Never administer acetaminophen before a child's temperature has been measured with a thermometer.

A childcare service provider may have his own container of acetaminophen. The trademark, the form, for example, liquid suspension, and the concentration (milligrams per millilitre, i.e. 80 mg/ml, 80 mg/5 ml or 160 mg/5 ml) must be recorded on the authorization form.

When a childcare service provider obtains acetaminophen from a pharmacy, he must be sure to purchase a product that contains acetaminophen alone. The use of products that combine acetaminophen and other drugs, such as decongestants, antitussives or expectorants, is strictly prohibited. Do not hesitate to consult the pharmacist to obtain a form of acetaminophen at the correct concentration and the best price. The private labels of acetaminophen

that pharmacies sell are all as effective as the original brands and are often cheaper.

To minimize the risk of error, a childcare service provider must keep only one concentration of liquid acetaminophen (80 mg/ml, 80 mg/5ml or 160 mg/5ml). If the childcare service provider only accommodates children under 18 months of age, the concentration of 80 mg/ml is recommended. If the childcare service provider only accommodates children over 18 months of age, the concentration of 80 mg/5 ml or 160 mg/5 ml is recommended. If the childcare service provider accommodates children of all ages, he must choose and keep only one of the three concentrations available (80 mg/ml, 80 mg/5 ml or 160 mg/5 ml).

The use of the liquid form of acetaminophen is preferable. Tablets are to be avoided since they do not allow for accurate dosage, especially in the case of children under 5 years of age.

A childcare service provider must ensure that he keeps only formats of acetaminophen with a valid expiration date. Formats of acetaminophen past their use-by date must be returned to the pharmacy for disposal.

Acetaminophen must be kept out of the reach of children and under lock and key.

The use of adult formulations of acetaminophen (500-mg and 325-mg tablets) is strictly prohibited.

The administration of acetaminophen must be recorded in the register of medications. The parent must be informed to the number and times of daily administrations of acetaminophen.

WHAT YOU SHOULD KNOW

What is fever?

Fever is defined as a body temperature that is higher than normal. Normal temperature may vary somewhat depending on the child, the time of day, the outdoor temperature and the level of activity. The cause of the fever is more important than the temperature itself.

It is generally considered that there is fever if the temperature measured with a thermometer is above the normal temperature range. The value varies depending on the measurement method.

Values above which there is fever, depending on the measurement method

Temperature measurement	Values in Celsius degrees (°C) above which the child must be deemed to have a fever
Oral (mouth)	38 °C or over
Rectal (rectum)	38.5 °C or over
Tympanic (ear)	38.5 °C or over
Axillary (underarm)	37.5 °C or over

How to take a child's temperature

The only sure way to measure fever is to take the child's temperature. A child's temperature must be checked whenever the child's general condition (frantic crying, loss of energy, change in general condition, loss of appetite, irritability, and so on) or physical symptoms (flushed cheeks, excessively warm skin, sweating) could be signs of fever. The rectal temperature measurement method is the most reliable and the axillary (underarm) temperature measurement method is the least reliable.

The following measures are recommended:

- take the rectal temperature of children under 2 years of age. At that age, to know if they have a fever, take the axillary (underarm) temperature. If it is equivalent to or greater than 37.5 °C, a second rectal temperature reading should be taken to confirm beyond a doubt that the child has a fever;
- take the axillary or tympanic (ear) temperature of children between 2 and 5 years of age;
- take the oral temperature only of children over 5 years of age. The tympanic (ear) temperature measurement method can also be used with these children;
- use the appropriate thermometer. Glass and mercury thermometers are not recommended because of the risks of accidental exposure to that toxic substance if they break. Fever strips (strips placed on the child's forehead or cheeks) are not recommended because they do not give accurate readings. Electronic thermometers are recommended;
- always use disposable plastic tips as they are more hygienic. Disinfect the thermometer properly between uses according to the manufacturer's recommendations;
- apply a water-based gel lubricant or petroleum jelly from a single-dose pouch to the disposable plastic tip before taking a rectal temperature measurement;
- if the child has just been physically active or has drunk a cold or hot beverage, wait approximately 20 minutes before taking the child's temperature;
- always comply with the time requirements for the thermometer being used since the time required may vary with the thermometer.

WHAT TO DO

Children under 3 months of age

If a child under 3 months of age has a fever, that is, if the rectal temperature is 38.5 °C or over:

- dress the child comfortably and lightly;
- have the child drink at more frequent intervals;
- keep an eye on the child and take the child's temperature again after 60 minutes, or sooner if the child's condition seems to be worsening;
- notify the parent immediately, ask the parent to come and pick up the child and, in the meantime, apply the measures listed above; and
- if the parent cannot come to pick up the child, call the persons designated by the parent as emergency contacts and if they cannot be reached, take the child to a medical service, to the local community service centre or to a hospital emergency department; do not administer acetaminophen without a written medical authorization for the child.

Children 3 months of age or older

If a child 3 months of age or older has a fever, that is, if the rectal or tympanic temperature is 38.5 °C or over or if the axillary temperature is 37.5 °C or over if the child is over 2 years of age, you must:

- dress the child comfortably and lightly;
- have the child drink at more frequent intervals;
- keep an eye on the child and take the child's temperature again after 60 minutes, or sooner if the child's condition seems to be worsening;
- inform the parent of the child's condition;
- acetaminophen may be administered to relieve the child, according to the dosage guidelines below or the dosage instructions on the medication container, in accordance with the rules in this Protocol;
- one hour after administering acetaminophen, take the child's temperature again and if it has not fallen or the child's condition does not improve, ask the parent to come and pick up the child. If the parent cannot be reached, call the persons designated by the parent as emergency contacts and if they cannot be reached, take the child to a medical service, to the local community service centre or to a hospital emergency department.

How to determine the dose of acetaminophen and its administration

It is not always necessary to give a medication to reduce a fever if the child does not display any other symptoms.

When acetaminophen is administered:

- check the child's weight recorded in his file. To ensure effective treatment, the child's weight, not his age, must determine the exact dosage. In case of doubt, confirm the child's weight with the parent;
- always use simple words, appropriate to the child's age, to explain to the child the relationship between his or her condition, the medication being taken and the expected results;
- wash your hands before handling the medication;
- always check:
 - the name of the product on the container to ensure that it is acetaminophen;
 - the concentration of acetaminophen (80 mg/ml, 80 mg/5ml or 160 mg/5 ml) indicated on the product container before determining the dose to be administered;
 - the expiry date of the product;
- determine the dose to be administered using the table in this Protocol or according to the product manufacturer's instructions;
- never exceed the dose indicated in the table included in this Protocol or that on the product container;

- always accurately measure the dose of liquid acetaminophen to be administered using a medicine spoon calibrated in ml or a medicine dropper calibrated in ml. Never use a kitchen spoon. The use of a medicine spoon calibrated in ml is strongly recommended since it allows for more accurate measurement of the dose;
- shake the container of acetaminophen before removing the dose in the case of a suspension;
- once the dose has been measured using a calibrated medicine spoon or a calibrated medicine dropper, pour the medication into a spoon calibrated in ml or a goblet calibrated in ml and administer it to the child. Never put the medicine dropper or the medicine spoon directly into a child's mouth, unless it is a disposable dropper or spoon. The spoon or the goblet must be washed in very hot, soapy water after use if it is to be reused;
- wash your hands after administering the medication.

Dosage of acetaminophen to be administered depending on the child's weight

Weight of the child	Volume of medication to be administered according to the concentration of the acetaminophen-based product		
	Kilograms (kg)	80 mg/ml	80 mg/5 ml
4.3 – 5.3	0.8 ml	4 ml	2.0 ml
5.4 – 6.3	1.0 ml	5 ml	2.5 ml
6.4 – 7.4	1.2 ml	6 ml	3.0 ml
7.5 – 8.5	1.4 ml	7 ml	3.5 ml
8.6 – 9.5	1.6 ml	8 ml	4.0 ml
9.6 – 10.6	1.8 ml	9 ml	4.5 ml
10.7 – 11.7	2.0 ml	10 ml	5.0 ml
11.8 – 12.7	2.2 ml	11 ml	5.5 ml
12.8 – 13.8	2.4 ml	12 ml	6.0 ml
13.9 – 14.9	2.6 ml	13 ml	6.5 ml
15.0 – 15.9	2.8 ml	14 ml	7.0 ml
16.0 – 17.0	3.0 ml	15 ml	7.5 ml
17.1 – 18.1	3.2 ml	16 ml	8.0 ml
18.2 – 19.1	3.4 ml	17 ml	8.5 ml
19.2 – 20.2	3.6 ml	18 ml	9.0 ml
20.3 – 21.3	3.8 ml	19 ml	9.5 ml
21.4 – 22.3	4.0 ml	20 ml	10.0 ml
22.4 – 23.4	4.2 ml	21 ml	10.5 ml
23.5 – 24.5	4.4 ml	22 ml	11.0 ml
24.6 – 25.5	4.6 ml	23 ml	11.5 ml
25.6 – 26.6	4.8 ml	24 ml	12.0 ml
26.7 – 27.7	5.0 ml	25 ml	12.5 ml
27.8 – 28.7	5.2 ml	26 ml	13.0 ml
28.8 – 29.8	5.4 ml	27 ml	13.5 ml
29.9 – 30.9	5.6 ml	28 ml	14.0 ml
31.0 – 31.9	5.8 ml	29 ml	14.5 ml
32.0 – 33.0	6.0 ml	30 ml	15.0 ml
33.1 – 34.1	6.2 ml	31 ml	15.5 ml
34.2 – 35.1	6.4 ml	32 ml	16.0 ml

- The dosage indicated above is based on a maximum dose of 15 mg/kg/dose.
- The dosage unit may be repeated every 4 to 6 hours.
- Do not exceed 5 doses in a 24-hour period.

Dose administration errors

It is important to react promptly if you notice that the dose of acetaminophen administered to a child is too high. Immediately contact the Centre antipoison du Québec (1-800-463-5060) and follow its instructions. You must notify the child's parent.

WARNING

Ibuprofen (Advil™, Motrin™ and other brands)

A clear distinction must be made between acetaminophen and ibuprofen. Ibuprofen must never be given to a child under 6 months of age.

Although both medications have antipyretic (fever-reducing) properties, they must not be confused because they belong to different classes of medications and work differently. Ibuprofen must not, under any circumstances, be substituted for acetaminophen in the application of this Protocol. You must, therefore, be vigilant and never confuse ibuprofen and acetaminophen and never substitute one for the other.

It should be noted that this Protocol may be applied as indicated even if a child has received ibuprofen at home before arriving at the childcare service, regardless of the time elapsed. There is no contra-indication to or danger in giving acetaminophen to a child who received ibuprofen earlier since the two medications do not work in the same way.

OTHER MEDICATIONS:

The availability of an increasing number of combination medications containing acetaminophen and another pharmaceutical product on the market calls for greater care in applying this Protocol. A number of cough syrups, for example, contain acetaminophen.

Good communication between the parents and the person authorized to administer the medication is important. The person authorized to administer the medication must know what medication the child received in the 4 hours before arriving at the childcare service and ask the parent if the medication contained acetaminophen. At the same time, the parent must be informed of the doses and times at which acetaminophen was administered at the childcare service. Remember that you must always allow a minimum of 4 hours to elapse between the administration of two doses of acetaminophen.



AUTHORIZATION FORM FOR THE ADMINISTRATION OF ACETAMINOPHEN

A parent is not required to agree to the administration of the Protocol. However, if a parent does not sign the authorization form, acetaminophen may only be administered to his child if he and a member of the Collège des médecins du Québec give written authorization. A parent may limit the period of validity of the authorization by indicating the duration of the authorization in the space provided.

I hereby authorize _____
(name of childcare centre, day care centre, person recognized as a home childcare provider or person who assists the provider, as the case may be, or person designated under section 81 of the *Educational Childcare Regulation*)

to administer to my child, in accordance with this Protocol, acetaminophen sold under the following brand name:

Child's surname and given name

Weight of the child

Weight in kg	Date	Parent's initials

Weight in kg	Date	Parent's initials

_____ Authorization period

_____ Parent's signature Date

This Protocol is an adaptation of a protocol prepared by the Ministère de la Famille and revised by the Association des pédiatres du Québec, revised by representatives of the Ministère de la Santé et des Services sociaux in 2010 and then in 2013 and approved by the Association des pédiatres du Québec in 2013. The information that it contains reflects the state of knowledge on the topic in 2013.