

2. Communicable diseases in schools/centres

2.1 Signs and symptoms of some common communicable diseases

The typical signs and symptoms of some commonly encountered communicable diseases are listed in Appendix 5 for easy reference. The list is not meant to be exhaustive. For more information about different types of communicable diseases, please visit the CHP website at <http://www.chp.gov.hk/>.

2.2 Subtle signs and symptoms of infection among children

2.2.1 Not all children develop the typical signs and symptoms when infected. Some may have less obvious features. In addition, young children may not know how to express their discomfort. All these factors may delay the detection of infection and increase the risk of spread of disease. Hence, it is important for the staff to be vigilant to the subtle physical changes for early detection and treatment.

2.2.2 Staff should pay attention to the children who develop the following subtle signs and symptoms :

- Change in body temperature: Most children develop fever when infected but there are exceptions. Some children may have lower body temperature under normal condition. Their body temperature will not increase too much even when infected. If the temperature is higher or lower than his/her usual body temperature, he/she may have underlying infection.
- Crying and nagging for no reason, restlessness
- Loss of appetite
- Lack of energy
- Shortness of breath
- Frequent eye rubbing
- Frequent scratching

2.2.3 To facilitate the schools/centres staff to detect the changes, concerned staff should maintain proper personal health records for each child and

check their temperatures regularly as advised by CHP. In addition, staff should pay more attention to young children who have special health conditions since they are more vulnerable to infection than others.

2.3 Measuring body temperature

2.3.1 Most children develop fever when infected but there are exceptions. Some children have fluctuating temperature when infected. Therefore, it is important to measure and record children's body temperature properly as baseline for comparison. School/centre staff should exercise vigilance to identify children with fever, in particular during outbreaks of communicable diseases, such as influenza-like illnesses or when children develop symptoms of infection.

2.3.2 Core and surface temperature

Body temperature can be divided into core temperature and surface temperature. Core temperature refers to the temperature of deeper tissues and can be taken through the oral cavity, rectum or ear; whereas surface temperature is the temperature of surface skin tissues and can be taken at the armpit. Since body temperature (surface temperature in particular) is more susceptible to changes in the surroundings, the following should be noted to ensure accuracy in measurement:

- Familiarise with the correct use of thermometers before taking temperature.
- Take the daily temperature for each child by using the same method at around the same time of the day to minimise variation caused by different measurement methods or environment.
- Remind children to avoid doing exercise or having excessively cold or hot food and drinks within 30 minutes before taking temperature.

2.3.3 Reference range for temperature screening

If oral thermometer is used, temperature not higher than 37.5°C (99.5°F) is considered normal. If ear or rectal thermometer is used, the measured temperature will be 0.5°C (0.9°F) higher than that of an oral thermometer. As such, ear or rectal temperature not higher than 38°C (100.4°F) is considered normal.

2.3.4 Body temperature varies with age, time of day and level of physical activity. For screening purpose, temperature above the reference range quoted below will be considered as significant and one should consult a doctor for suspected fever.

Measuring method	Celsius scale (°C)	Fahrenheit scale (°F)
Oral	37.5 °C	99.5 °F
Ear	38.0 °C	100.4 °F
Rectal	38.0 °C	100.4 °F
Armpit	37.3 °C	99.1 °F

2.3.5 Types of thermometers

In general, there are mercury, digital, chemical LCD and infrared thermometers for taking oral, rectal, armpit, ear and forehead temperature. Before using a specific thermometer, read the instructions carefully for the proper procedures of using it as well as the reference range of the readings. Accuracy, suitability, convenience and acceptability by parents should all be taken into account when choosing the appropriate thermometer. Some schools/centres may use infrared forehead thermometers for screening fever in children. Such devices, however, are less accurate in reflecting the true core body temperature. Hence, another type of thermometer should be used for taking temperature to confirm fever.

2.3.6 Methods of taking body temperature

Method	Steps for measuring	Points to note	Recommendations
Oral	<ul style="list-style-type: none"> • Cover the thermometer with a plastic jacket • Place the thermometer under the tongue near the root • Tell the child to close the mouth tight but not to bite on the thermometer or talk • Wait for 1 to 3 minutes before taking it out to check the reading 	<ul style="list-style-type: none"> • Avoid cold or hot food before taking temperature • Close the mouth when taking temperature. Do not speak • If the child carelessly bites off the mercury thermometer, he / she should be sent to the hospital immediately for further management 	<ul style="list-style-type: none"> • Suitable for older children • Not applicable to children/students who are unconscious, confused or who cannot close their mouths tight
Ear	<ul style="list-style-type: none"> • Stabilise the head position of the child • Pull his / her ear backwards and upwards to make the ear canal straight • Fit the probe tip covered with a plastic jacket slightly into the depth of the ear canal • Follow the instructions to make suitable adjustments when using an ear thermometer 	<ul style="list-style-type: none"> • Specify on the record that the measurement is the ear temperature as it is usually 0.5°C higher than the oral one • Direction of the probe tip should be correct, otherwise it will give an inaccurate reading • The ear pressed against the pillow during sleep has a higher temperature, so the other ear should be used for taking temperature if one is just awake 	<ul style="list-style-type: none"> • It is non-intrusive, and therefore has little limitations on its application. • It is particularly suitable for use in schools/centres • Not applicable to persons with obstruction of ear canal caused by ear wax or otitis

Method	Steps for measuring	Points to note	Recommendations
Rectal	<ul style="list-style-type: none"> • Ensure the privacy of the child and protect him / her from catching cold • Help the child to lie down on one side with knees bent • Cover the probe of the thermometer with a plastic jacket and put some lubricant on the tip • Insert it gently down about 2.5 cm of the rectum • Wait for 1 to 3 minutes before taking it out to check the reading 	<ul style="list-style-type: none"> • Specify on the record that the measurement is the rectal temperature as it is 0.5°C higher than the oral one • The accuracy of the measurement will be affected if large amount of faeces is accumulated in the rectum 	<ul style="list-style-type: none"> • Suitable for young children
Armpit	<ul style="list-style-type: none"> • Put the thermometer under the armpit • Place the forearm of the child horizontally across his / her chest to secure the thermometer under the armpit • Wait for 5 minutes before taking it out to check the reading 	<ul style="list-style-type: none"> • Specify on the record that the measurement is an armpit temperature as it is usually lower than the oral one 	<ul style="list-style-type: none"> • Suitable for conditions under which all the above are not applicable

2.3.7 Cleaning and disinfection of thermometers after use

- Oral and rectal thermometers should be treated separately. Patients with communicable diseases should use separate personal thermometers to avoid cross-infection.
- Mercury thermometers - wash with cold water and detergent first; immerse in 70% alcohol for not less than 10 minutes; then air dry and store it in a dry place.
- Electronic thermometers must not be disinfected with high temperature because their electronic components will be damaged and their normal functioning affected. Electronic thermometers should be cleansed and disinfected according to the recommendations in the user manual.