

# Factsheet on Products for Heat and Cold Therapies

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## Introduction

- Heat and cold therapies are types of physiotherapy widely used in the household to reduce pain and muscle spasm.
- Products for heat and cold therapies can be either self-made using hot towels or ice cubes, or purchased from the market. Each of them has its characteristics and method of use. However, incorrect use of heat or cold therapies can exacerbate the symptoms and may lead to serious problems like frostbite, burns, or electric shock.

## Heat Therapy 熱敷

### Principles and functions

- Heat application can increase the temperature of the applied area, dilate the blood vessels underneath and improve blood circulation, thereby reducing swelling and pain. Heat application can relieve muscle spasm and joint stiffness, improve flexibility of soft tissues and hasten recovery.
- Heat application also relieves chronic inflammation and pain in conditions like osteoarthritis, neck and back pain, or muscular fatigue. But it is not suitable for affected areas with redness or warm to touch.

### Methods of use

- There are two types of heat application, namely moist heat therapy and dry heat therapy. Moist heat therapy uses wet heat sources, e.g. steam towels, to enhance heat penetration into the skin. Dry heat therapy uses dry heat sources, e.g. electric heat pad. Although it is easier and more convenient to use than moist heat therapy, it will lead to dryness of skin.
- When heat application is used, apply heat source directly over the affected area for not more than 20 minutes, 2 to 3 times a day. The applied area should feel warm and comfortable, instead of burning or “boiling heat” which is a warning sign of burns.

### Contraindications to heat application

1. An acutely inflamed area or a recently injured area. Heat application will cause swelling and pain in the affected area and aggravate the symptoms.
2. Open wound, dermatitis or bleeding in the affected area.
3. Compromised circulation in the affected area, e.g. persons with peripheral vascular disease (PVD).

4. Skin sensation impairment, e.g. persons with blunted touch sensation because of diabetes or stroke.
5. For elderly with circulatory problems, opinion from doctor or physiotherapist should be sought before using heat application.
6. Persons who cannot understand instructions, e.g. dementia patients.

## Cold Therapy 冷敷

### Principles and functions

- Cold application can lower the temperature and reduce the blood flow of the applied area, thereby reducing inflammation, swelling and bleeding. It can also reduce muscle spasm and pain.
- Cold application may be applied to an acutely inflamed area and a recently injured area (i.e. the affected part with redness, warm to touch, swollen and painful), e.g. sprain or acute arthritis, etc.

### Methods of use

- When using cold application, apply the cold source to the affected area for not more than 20 minutes, 2 to 3 times a day. The applied area should feel cold, followed by numbness and redness. The pain will gradually decrease, but users should be aware of frostbite. If there is skin rash, increased pain, persistent discomfort at the applied area after cold application, medical advice should be sought.

### Contradictions to cold application




1. Open wound or dermatitis in the affected area.
2. Compromised circulation in the affected area, e.g. persons with PVD.
3. Skin sensation impairment, e.g. persons with blunted touch sensation because of diabetes or stroke.
4. Cold allergy or persons could not sustain cold application.
5. Circulatory problems, e.g. persons with heart disease or hypertension, should consult doctor or physiotherapist before using cold application.
6. Persons who cannot understand instructions, e.g. dementia patients.




### Points to note on the use of heat and cold application

1. Observe instructions for use and safety information of different products for heat/cold application. Use with a towel, cover or cloth for insulation to prevent frostbite or burns.
2. Avoid pressing the affected area on a product for heat/cold application to prevent accidents.
3. If there is increased pain, persistent discomfort or skin rash after using heat/cold application, get medical attention as soon as possible.
4. Use of analgesic ointment will affect skin sensation, it should be applied after using heat/cold application to reduce the risk of frostbite or burns.






5. Pay special attention when using heat or cold application on children or elderly whose skin may be burnt or frozen easily. Adult supervision is recommended when using heat/cold application on children.
6. For heat/cold gel pack, check for leaks and punctures before use. If the product is punctured or leaking, throw away immediately and then wash hands thoroughly. Do not try to repair it yourself.
7. If the gel contents of hot/cold gel pack are in contact with skin or eyes, remove the pack immediately. Thoroughly flush the affected area with water. If the gel contents are swallowed, seek medical attention immediately.

### Types of heat application products and their methods of use:

Name	Methods of use	Points to note:
1. Hot towel	<ul style="list-style-type: none"> <li>- Put a towel into warm water. After wringing it out, put it on the affected area to produce a moist heat effect.</li> </ul>	<ul style="list-style-type: none"> <li>- Hot towel can be cooled off quickly. You have to repeat the above steps several times to achieve better result.</li> </ul>
2. Hot-water bottle 	<ul style="list-style-type: none"> <li>- Put an adequate amount of warm water into a hot-water bottle and check for leaks and pre-heat the bottle. Refill the hot-water bottle with warm water to around two-thirds full.</li> <li>- To ensure more effective use, expel air from the bottle until water appears at the opening. Then screw the stopper sufficiently tight and wrap the bottle in the given cloth cover or a towel (dry or semi-wet warm towel) and place it on the affected area.</li> </ul>	<ul style="list-style-type: none"> <li>- Hot-water bottles can keep warm for a longer period and is lower in price and easy to buy. However, rubber of the hot-water bottles can perish, become stiff and split over time.</li> <li>- Moreover, failure to screw the stopper tight can cause leakage of water.</li> </ul>
3. Instant heat pack 	<ul style="list-style-type: none"> <li>- There are transparent chemical liquid and a metal disc inside the pack. The transparent liquid will crystallise and produce heat when the metal disc is pressed.</li> <li>- The pack should be wrapped in a towel (dry or semi-wet warm towel) before placing on the affected area.</li> <li>- After use, it can be returned to liquid form by simmering on the stove and cooling to room temperature before next use.</li> </ul>	<ul style="list-style-type: none"> <li>- Instant heat pack can be used conveniently any time in any place and no special preparation procedures are required.</li> <li>- However, the restoration procedures are quite complicated and users should use the stove with care during the process.</li> </ul>
4. Gel pack 	<ul style="list-style-type: none"> <li>- It can be used for hot or cold application. The pack can be heated in hot water or microwave oven.</li> <li>- No matter which method is used, make sure that the gel is level before heating so that the gel would be heated evenly.</li> <li>- After heating, the pack should be wrapped in the given cloth cover or a towel (dry or semi-wet warm towel) before placing on the affected area.</li> </ul>	<ul style="list-style-type: none"> <li>- For different products, the heating time, temperature control of microwave oven and methods of heating may be different. Therefore, instructions from the manufacturers should be followed when heating the pack.</li> </ul>

Name	Methods of use	Points to note:
<p>5. Microwave activated moist heat pad</p> 	<ul style="list-style-type: none"> <li>- The pad contains special materials and is covered with cotton layer. It can produce moist heat by drawing moisture from humidity in the air.</li> <li>- The pad can be heated in microwave oven and applied to the affected area directly or with the given cloth cover.</li> </ul>	<ul style="list-style-type: none"> <li>- The pads are in different shapes for use on specific areas of the body, e.g. back, waist or shoulder.</li> <li>- Since the heating time and temperature control of microwave oven vary in different products, instructions from the manufacturers should be followed when heating the pad.</li> <li>- As the pad can be reused, instructions in the user manuals should be followed when cleaning the pad after each application.</li> </ul>
<p>6. Electric heat pad</p> 	<ul style="list-style-type: none"> <li>- The pad can produce an effect similar to moist heat and should be used together with the given cloth cover.</li> <li>- User can manually adjust or preset the temperature and the duration of use according to the model of the pad.</li> <li>- Check the condition of the electric heat pad before use. If in doubt, please contact the manufacturer or supplier before use.</li> </ul>	<ul style="list-style-type: none"> <li>- Different sizes and shapes of pads are available on the market and their prices are higher than those of other applications.</li> <li>- User has to ensure electrical safety and comply with the local requirements concerning voltage and power plug before use.</li> <li>- Moreover, avoid punching (e.g. with safety pin) or fold the pad tightly which may cause damage to the heating elements inside the pad.</li> <li>- Do not use the pad while sleeping or press the affected area upon the electric heat pad. Never treat the pad as an electric blanket.</li> <li>- Never use the electric heat pad and hot water bottle together so as to reduce the risk of electric shock when the hot water bottle has leakage.</li> </ul>
<p>7. Single-use instant heat pad</p> 	<ul style="list-style-type: none"> <li>- Single-use instant heat pad does not require pre-heating. After removing the wrapping, the pad will produce heat after contacting with the air.</li> </ul>	<ul style="list-style-type: none"> <li>- Single-use instant heat pad can be used conveniently any time in any place and no special preparation procedures are required.</li> <li>- However, this type of pad can be used only once and thus the cost is relatively high.</li> <li>- Moreover, instructions from the manufacturer should be followed (for example user should put it into a given cloth cover during use), the duration of use should not exceed the manufacturer's indication.</li> </ul>

## Types of cold application products and their methods of use:

Name	Methods of use	Points to note:
1. Ice water	- Immerse the affected area in ice water (ice : water = 1:1).	- Although this method is simple and convenient, it is only suitable for smaller body parts, e.g. fingers, palms or feet, etc. - Prolonged use can lead to frostbite.
2. Ice cube 	- Take an ice cube from a freezer. Hold the ice cube with a towel in hand and massage the affected area upward and downward or in a circular movement with the flat side of the cube directly for 3 to 10 minutes. Never press hard on the affected area with the ice cube.	- This method can only be used on smaller areas. Since the ice cube is in direct contact with the skin, it should be rinsed to achieve a smooth surface if there are sharp edges. - Besides, to prevent frostbite, cold application should be applied for a shorter period and prolonged application to the same area should be avoided.
3. Ice bag 	- Check for leakage first and then fill the ice bag with ice cubes to around two-thirds full. - Try to expel air from the bag and then screw the stopper sufficiently tight and wrap the bag in a towel and place it on the affected area.	- Do not fill the ice bag with water and cool it directly in a freezer.
4. Self-made ice bag 	- Ice bag can be made by using plastic bag/zip bag and ice cubes. - Check for leakage first and then put the ice cubes and little amount of water into the plastic bag/zip bag and seal properly. Cover the affected area with a towel before cold application.	- This method is simple and minimal preparation procedures are required. Do not overload the ice bag by inserting too many ice cubes.
5. Gel pack 	- It can be used for hot or cold application. - Make sure that the gel is level before putting into a freezer so that the gel would be cooled evenly. - The pack should be wrapped in the given cloth cover or a towel before placing on the affected areas.	
6. Instant cold pack 	- Often used as first aid on sports injuries. - Instant cold pack does not need to be cooled in advance. The pack will become cool and available for use instantly by mixing the fluids in the inner bag and outer bag.	- In general, instant cold pack can be used only once and thus the cost is relatively high.

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