

Heat intolerance assessment and care

Introduction

Heat intolerance occurs when the body is unable to adapt to high temperatures. It can be caused by environmental conditions, disease, poor health maintenance, and certain medications. People at increased risk for heat intolerance include those taking psychotropic and anticholinergic medications, older adults, and those with poor fluid intake.

All psychotropic medications, except benzodiazepines (which include anti-anxiety drugs and sedatives), can decrease the body's response to heat. (See *Drugs that can cause heat syndromes*.) Heat-related illnesses, including heat intolerance resulting from medications, occur more commonly during periods of temperatures of 85° F (29.5° C) and above and high humidity.

Heat-related illnesses include heat rash, heat edema, heat cramps, heat syncope, heat exhaustion, and heatstroke (the most serious heat-related illness). Left untreated, heat exhaustion can lead to heatstroke, which may cause death.

DRUGS THAT CAN CAUSE HEAT SYNDROMES

Drugs that may cause decreased heat loss, which can increase the risk of developing heat intolerance, include:

1. anticholinergics
2. antihistamines
3. beta-adrenergic blockers
4. cyclic antidepressants
5. diuretics
6. ethanol
7. lithium
8. phenothiazine
9. salicylates.

Equipment

- Stethoscope
- Sphygmomanometer
- Thermometer
- Oral fluids, as ordered
- Optional: I.V. infusion equipment; fluids, ice, washcloths for compresses

Implementation

1. Review the patient's medical history and therapeutic regimen.
2. Confirm the patient's identity using two patient identifiers according to your facility's policy.¹
3. Assess the patient for signs of heat-related illness, including heat rash and edema.
4. Ask the patient whether he's experiencing symptoms of heat cramps, exhaustion, or heatstroke. (See *Signs and symptoms of heat syndromes*.)
5. Obtain the patient's vital signs.
6. Assess the patient's hydration status.
7. Verify the doctor's treatment orders depending on your assessment findings.
8. Notify the doctor immediately if the patient is experiencing signs and symptoms of heatstroke.
9. Provide interventions as appropriate and as ordered. (See *Nursing interventions for heat syndromes*.)
10. Continue to monitor the patient's vital signs and hydration status.
11. Document the procedure.²

| SIGNS AND SYMPTOMS OF HEAT SYNDROMES | |
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| <i>Heat syndromes can be broken down into three categories: heat cramps, heat exhaustion, and heatstroke. This table highlights the major assessment findings associated with each category.</i> | |
| Syndrome | Signs and symptoms |
| 1. Heat cramps | <ul style="list-style-type: none"> • Mild agitation • Mild hypertension • Moist, cool skin and muscle tenderness; involved muscle groups possibly hard and lumpy • Muscle twitching and spasms • Nausea and abdominal cramps • Tachycardia • Temperature ranging from 99° to 102° F (37.2 to 38.9° C) |
| 2. Heat exhaustion | <ul style="list-style-type: none"> • Dizziness • Headache • Hypotension • Muscle cramping • Nausea and vomiting • Oliguria |

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| | <ul style="list-style-type: none"> • Pale, moist skin • Rapid, thready pulse • Syncope or confusion • Temperature up to 104° F (40° C) • Thirst • Weakness |
| 3. Heatstroke | <ul style="list-style-type: none"> • Atrial or ventricular tachycardia • Confusion, combativeness, and delirium • Fixed, dilated pupils • Hot, dry, reddened skin • Loss of consciousness • Seizures • Tachypnea • Temperature greater than 106° F (41.1° C) |

Patient Teaching

Teach the patient and his family about heat intolerance and how to prevent heat-related illness. (See [Teaching about heat intolerance.](#))

| TEACHING ABOUT HEAT INTOLERANCE |
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| <p>Heat intolerance and heat syndromes are easily preventable, so it's important to educate patients at risk for these conditions about the various factors that cause them.</p> <ul style="list-style-type: none"> • Advise patients who are obese, elderly, or taking drugs that impair heat regulation to avoid overheating. <ul style="list-style-type: none"> – Encourage the patient to dress in loose-fitting, light-colored clothing and avoid overexertion, especially during hot periods during the day. – Advise the patient to avoid direct exposure to sunlight and keep his home or work environment as cool as possible. • Stress to patients who are taking anticholinergics to prevent or treat extrapyramidal adverse effects that these drugs can reduce the ability to perspire, increasing the risk of heat-related illness. • Advise the patient to maintain hydration by drinking plenty of fluids and to increase his sodium intake, if not contraindicated, during exposure to hot, humid environments. • Tell the patient with heat cramps or heat exhaustion to refrain from exercising until signs and symptoms resolve, then resume exercise gradually, making sure to drink plenty of electrolyte-containing fluids. • Warn the patient who experienced heatstroke that residual hypersensitivity to high temperatures may persist for several months. |

NURSING INTERVENTIONS FOR HEAT SYNDROMES

Nursing interventions for heat syndromes are intended to reduce the patient's body temperature and maintain fluid balance.

Heat cramps

- Move the patient to a cool place (in air conditioning when possible).
- Provide water or other liquids such as electrolyte solutions. Avoid coffee and tea.
- Increase salt intake, unless contraindicated.
- Encourage rest.
- If indicated and ordered, administer medication to prevent or treat extrapyramidal adverse effects.
- Provide teaching about the adverse effects of the medication administered.
- Maintain the patient in a well-ventilated room.

Heat exhaustion

- Move the patient to a cool place (in air conditioning when possible).
- Provide water or other liquids. Avoid coffee and tea.
- Encourage rest.
- Withhold psychotropic medications as ordered.
- If indicated and ordered, administer non-anticholinergic medication to prevent or treat extrapyramidal adverse effects.
- Provide teaching about the adverse effects of the medication administered.
- Maintain the patient in a well-ventilated room.

Heatstroke

- Notify the doctor immediately.
- Remove the patient's clothing.
- If a tub is available, immerse the patient in ice water. Alternatively, use cold compresses or shower the patient in cold water.
- Obtain I.V. access and administer fluids as ordered.
- Withhold psychotropic medications as ordered.
- If indicated and ordered, administer non-anticholinergic medication to prevent or treat extrapyramidal adverse effects.
- Provide teaching about the adverse effects of the medication administered.
- Maintain the patient in a well-ventilated room.

Complications

Untreated heat cramps can lead to heat exhaustion. Heat exhaustion can lead to life-threatening heatstroke.

Documentation

Record your assessment findings and the patient's vital signs in his medical record. Also record the patient's signs and symptoms of heat-related illness, any treatment given, and the patient's response to treatment. Note any teaching provided and the patient's understanding of the information.

References

1. The Joint Commission. *Comprehensive Accreditation Manual for Hospitals: The Official Handbook*. Standard NPSG.01.01.01. Oakbrook Terrace, IL: The Joint Commission, 2010.
2. The Joint Commission. *Comprehensive Accreditation Manual for Hospitals: The Official Handbook*. Standard RC.01.03.01. Oakbrook Terrace, IL: The Joint Commission, 2010.
3. Mohr, W.K. *Psychiatric-Mental Health Nursing: Evidence-Based Concepts, Skills, and Practices*, 7th ed. Philadelphia: Lippincott Williams & Wilkins, 2008.
4. Sederer, L.I. (2008, June 3). "Medical Alert—Increased Risk of Heat Illness to Persons Taking Antipsychotic Medications" [Online]. State of New York Office of Mental Health. Accessed January 2010 via the Web at <http://www.omh.state.ny.us/omhweb/heat/index.htm>.

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1. Review the patient's medical records.
2. Confirm the patient's identity.
3. Assess the patient for signs of heat-related illness.
4. Obtain the patient's vital signs.
5. Assess the patient's hydration status.
6. Verify the doctor's treatment orders.
7. Notify the doctor immediately if the patient is experiencing symptoms of heatstroke.
8. Provide interventions as appropriate and as ordered.
9. Continue to monitor the patient's vital signs and hydration status.
10. Document the procedure.