

TEMPERATURE IN THE WORKPLACE

M2 Introduction



COLD



HEAT



Few workers in the Caribbean experience cold working environments:

- cold storage workers; and
- some computer workers.

Many workers face hot, humid conditions in the workplace.

Slide 1

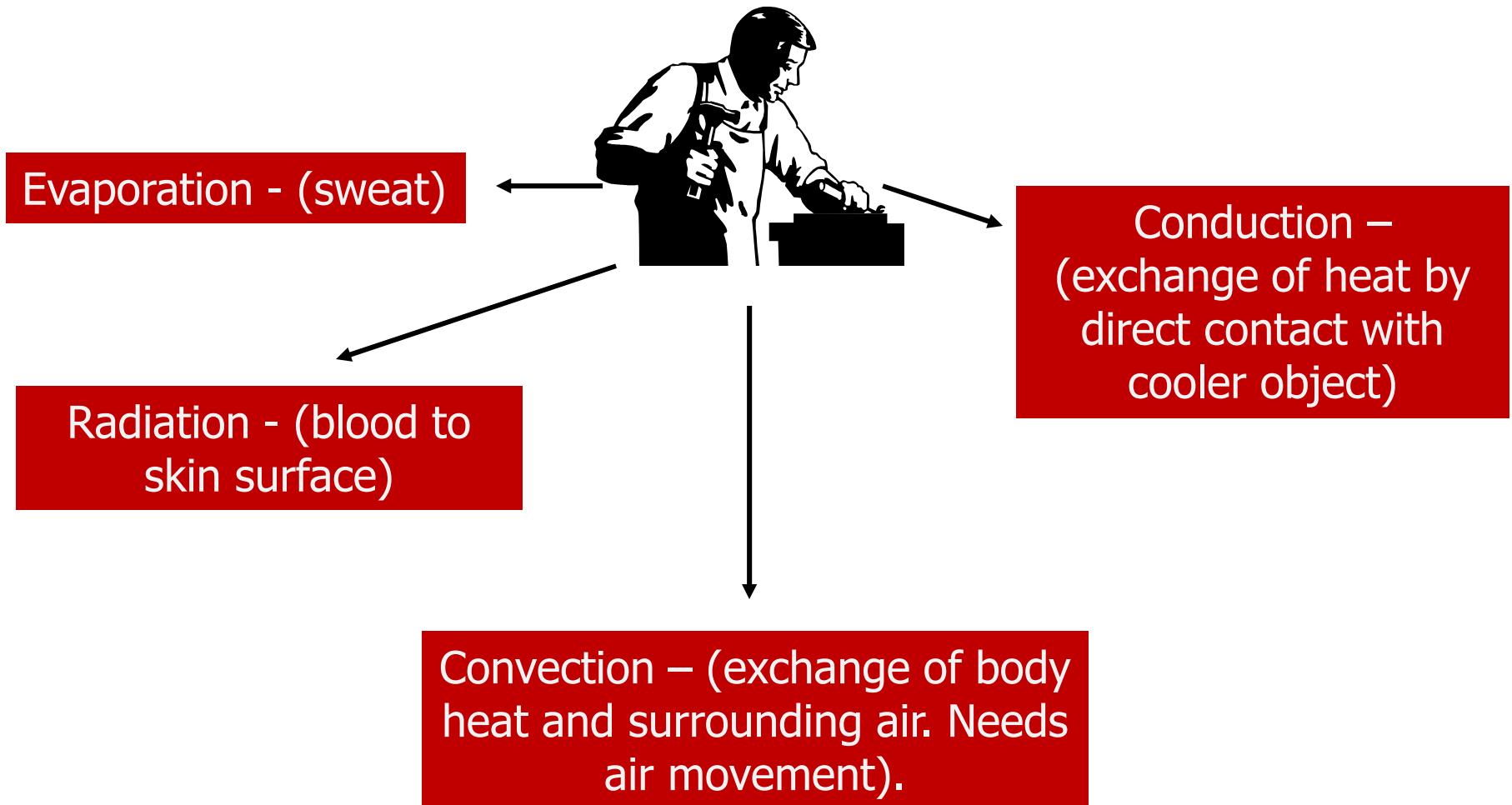
M2

Much more could be said about Temperature in the Workplace, but this presentation provides the basic information and should be sub-titled 'An Introduction'

Michael, 22/10/2011

HOW THE BODY DEALS WITH HEAT

HEAT



HOW HEAT AFFECTS WORKERS

Safety:

- fatigue and dizziness
- sweating palms (slippery)
- fogging of safety glasses
- possible burns
- lower performance/alertness
- increased irritability.

HEAT



Health:

- heat stress M1
- heat strain (distress)
- heat cramps
- heat exhaustion M3
- heat stroke
- heat rash (prickly heat)
- heat syncope (fainting) M4 .

Slide 3

- M1** Should separate heat stress and heat strain as they are different, and should be seen as different to the reader by adding a bullet for heat strain (done)
Michael, 22/10/2011
- M3** Heat stroke should be separated (in a separate bullet) from heat exhaustion as they are different, and should be seen as such by the reader
Michael, 22/10/2011
- M4** Heat Syncope is the technical term used for the disorder, and fainting is used to describe it. As such heat syncope should be placed first and then fainting put in brackets, instead of the other way around.
Michael, 22/10/2011

MEASUREMENT OF ENVIRONMENTAL HEAT LOAD

- **Dry-bulb temperature** – air temperature as registered by an ordinary thermometer and shielded from radiant heat.
- **Wet-bulb temperature** – measured by a thermometer whose bulb is covered by a wetted wick, effectively shielded from radiation and exposed to a current of rapidly moving air.
- **Absolute humidity** – refers to the mass of water per unit mass of dry air.
- **Relative humidity** – is the absolute humidity as a % of the maximum saturation humidity at the dry bulb temperature.
- **Heat index** – a calculation of heat stress which combines temperature and relative humidity.

Slide 4

M5

Added Heat Index bullet as a heat load measurement that is increasingly being used in North America and Australia

Michael, 22/10/2011

SOME STANDARDS FOR WORK vs ROOM TEMPS (WBtemp)

Work/rest format	Light Work	Moderate	Heavy
Continuous work	30.0	26.7	25
75% work: 25% rest	30.6	28.0	25.9
50% work: 50% rest	31.4	29.4	27.9
25% work: 75% rest	32.2	31.1	30.0

American Conference of Government Industrial Hygienists

THE INSTITUTE OF HEATING AND VENTILATION ENGINEERS (UK)

In temperate climates , thermal comfort for workers ranges between 16 – 24 degrees C (60.8 – 72.2 degrees F). For example:

Factories: sedentary work	19 Degrees Celcius
light work	16 Degrees Celcius
heavy work	13 Degrees Celcius
Offices	20 Degrees Celcius
Hospital wards	18 Degrees Celcius
Warehouses	16 Degrees Celcius
Shops	18 Degrees Celcius

FEW SUCH STANDARDS EXIST IN THE CARIBBEAN!

METHODS FOR CONTROLLING HEAT IN THE WORKPLACE

Engineering methods:

- increase general ventilation;
- use local exhaust ventilation in hot spots to “remove” heat;
- use “spot cooling” (fans) to reduce the local temperature; and
- use air conditioners/coolers.

HEAT



Change work practices:

- increase rest periods;
- job rotation;
- do “hot work” in coolest part of the day;
- provide more workers to reduce load on each worker; and
- water/electrolytes given.

NB: The use of PPE in hot environments often makes it worse!