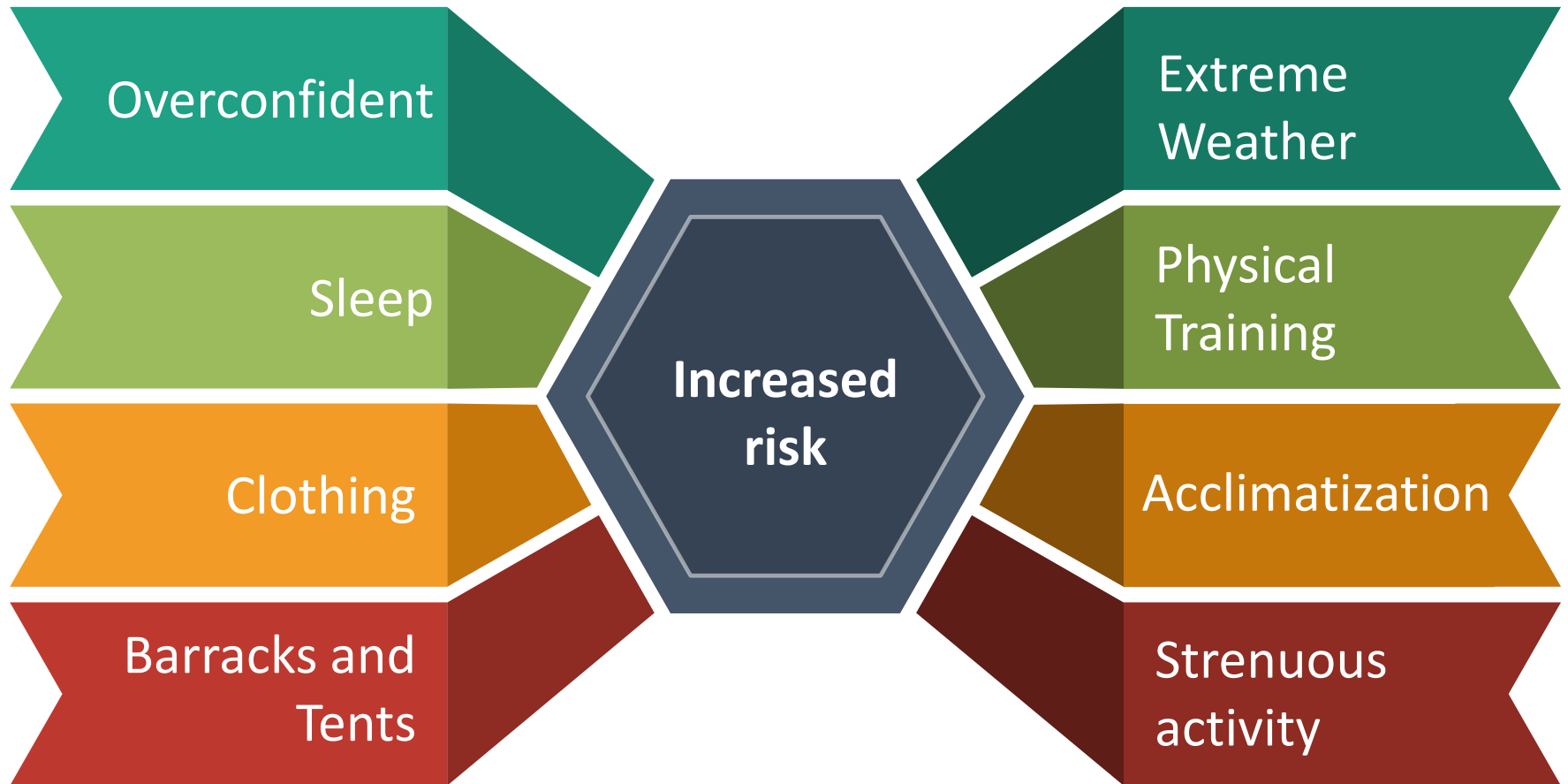


Prevention of Heat Related Illnesses – Practices in Army

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Heat Stress in Armed Forces Personnel



Epidemiological Triad Involved



Environment

- The total body heat produced by a **trained, physically fit, soldier marching with full equipment on a level ground** is **360 Kcal (1506 Kj)** per hour.
- **1000 Kcal (4184 Kj) of heat** is required to be dissipated during **march of 25 km at temperature of 21°C**.
- **2 ml of sweat dissipates one K Cal (4.184 Kj)** of heat, the evaporation of about **2 liters is required** .
- Loss of water at **32 ° C** will be **5 liters** and at **40 ° C** it is **12 liters of water**.

Environment

Heat Index Chart (Indian Meterological Department)

Temperature In Celsius	Relative Humidity													
	40	45	50	55	60	65	70	75	80	85	90	95	100	
27	27	27	27	27	28	28	28	29	29	29	30	30	31	
28	27	28	28	29	29	29	30	31	32	32	33	34	35	
29	28	29	29	30	31	32	32	33	34	36	37	38	39	
30	29	31	31	32	33	34	35	36	38	39	41	42	44	
31	31	32	33	34	35	37	38	39	41	43	45	47	49	
32	33	34	35	36	38	39	41	43	45	47	50	53	56	
33	34	36	37	38	41	42	44	47	49	52	55	57	60	
34	36	38	39	41	43	46	48	51	54	57	58	62	66	
35	37	39	41	43	45	48	50	53	57	60	64	68	72	
36	38	40	42	44	47	49	52	56	59	63	67	71	75	
37	41	43	45	47	51	53	57	61	64	69	73	78	83	
38	43	46	48	51	54	58								
39	46	48	54	64	68									
40	48	51	55	58										
41	51	54	58											
42	64	68												
43	68													

Category	Heat Index	Possible Heat Disorders
Caution	27 - 32	Fatigue Possible With Prolonged Exposure and or Physical Activity
Extreme Caution	32 - 41	Sunstroke, Muscle Cramps and or Heat Exhaustion Possible With Prolonged Exposure and or Physical Activity
Danger	41 - 54	Sunstroke, Muscle Cramps and or Heat Exhaustion Likely. Heat Stroke Possible With Prolonged Exposure and or Physical Activity
Extreme Danger	Above 54	Heat Stroke or Sun Stroke Likely

Work - Adaptations for Summer

Change of Uniforms:

- Lightweight
- Loose-fitting
- Permeable to water vapor clothing

For deserts:

- Wide brim hat
- Neck protection
- Long sleeved shirt





Work - Adaptations for Summer

- Restriction of working hours
- Living accommodation: Spacious & well ventilated
- Rest at least ten minutes each hour of walking
- Heat Stroke Centers and **Cool rooms**









Personnel

- Health Education including training on first aid
- Water Drinking Parade
- Buddy System
- Adequate rest and sleep
- Bathing
- No Alcohol

URINE COLOUR**POSSIBLE MEANING****RECOMMENDATION**

पेशाब का रंग

संभवतः अर्थ

क्या करें

CLEAR

साफ पेशाब

GOOD HYDRATION

शरीर में पानी पर्याप्त मात्रा में है ।

**PALE YELLOW**

हल्का पीला पेशाब

GOOD HYDRATION OR MILD DEHYDRATION

शरीर में पानी की थोड़ी कमी है ।

पानी पीना है ।

**BRIGHT YELLOW**

चमकीला पीला पेशाब

MILD OR MODERATE DEHYDRATION

शरीर में पानी की थोड़ी कमी या बहुत ज्यादा कमी है ।

ज्यादा पानी पीना है ।

OR JAUNDICE

पीलिया भी हो सकता है ।

**ORANGE,
AMBER**

नारंगी रंग का पेशाब

MODERATE OR SEVERE DEHYDRATION

शरीर में पानी की बहुत ज्यादा या तीव्र कमी है ।

जल्द ही
ज्यादा पानी पीना है ।

Acclimatization

PT Dress

Combat
Dress

Combat
Dress

Full Kit

Walk

Jog

Run

Run

Day 1-3

Day 4-7

Day 8-10

Day 11-14

Acclimatization

	Morning (wef 0530 hrs)			
Day	Activity	Dress	Duration	Temperature
1	Walk at 5 km/h	PT Dress	30 min	30 - 32
2	Walk at 6 km/h	PT Dress	40 min	30 - 32
3	Walk at 6 km/h	Combat Dress	40 min	30 - 32
4	Run PPT	PT Dress	Satisfactory Time	30 - 32
5	Walk at 6 km/h	Combat Dress	40 min	30 - 32
6	Walk / Jog at 8 km/h	Combat Dress	30 min	30 - 32
7	Walk at 6 km/h	Full FSMO Kit	40 min	30 - 32
8	Run 5 km	Combat Dress	30 min	30 - 32
9	Walk at 6 km/h	Combat Dress	45 min	30 - 32
10	Walk at 6 km/h	Full FSMO Kit	45 min	30 - 32
11	Run BPET	Full FSMO Kit	Satisfactory Time	30 - 32
12	Walk at 6 km/h	Combat Dress	30 min	30 - 32
13	Walk at 6 km/h	Combat Dress	30 min	30 - 32
14	Run BPET	Full FSMO Kit	Ideal Time	30 - 32

JAI HIND!