

EFFECT OF CLIMATE CHANGE ON SAUNDARY- AN AYURVEDIC ASPECT

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INTRODUCTION

The *saundarya* / beauty is defined as quality or aggregate of qualities in a person or thing that gives pleasure to the senses or pleasurable exalts the mind or spirit.¹ conventionally only exterior part taken as components of beauty like hair, teeth, nails and mostly skin. Skin is utmost important not only because of area covered by it but has relation with *manas*.² Human body is made up of *tridosha* and *panchamahabhuta*. When we discuss about the skin / beauty they also result of *tridosha* but the role of *pitta dosha* is dominant in skin because of *Bhrajak* *pitta* one among the five *pitta* provide lustre to skin.³ Climate is long term average of a region's weather events 'climate change' means the change of climate which attributed directly or indirectly by the anthropogenic activities that alters the composition of the global atmosphere. Climate change is usually measured in major shift in temperature, rainfall, snow and wind pattern lasting decades or more. The most important anthropogenic effect on the climate is increasing trend in the concentration of Greenhouse gases in the atmosphere which are likely to cause global warming. The temperature of Earth is continuously increasing since last century.⁴ Human and atmosphere of Earth works in synchronized way, the anthropogenic activities causing change in climate and climate is affecting human life, health and beauty.

MATERIAL METHODS

Ayurved classics such as *Charak samhita*, *Sushrutsamhita*, *Ashtanghritya*, and *Madhavidan* and various text books of geography, special and annual reports publish by various environmental conservation organization like Intergovernmental panel for climate change (IPCC), and material available online have been thoroughly screened and presented in systematic manner.

RELATION BETWEEN MOVEMENT OF EARTH AND DOSHA

The earth moves in space in two distinct ways, it rotates on its axis from west to east once in every 24 hours causing day and night. when the earth revolves round the Sun, it spins on, elliptical orbit at a speed of 18.5 miles per second, one complete revolution takes 365¼ days or a year.⁵ The Earth is inclined to the plane of elliptical orbit at an angle of 66 ½ ° giving rise to different season and varying lengths of day and night. When the Sun in northern hemisphere between 21st march to 23rd September there is hot season which contains two *ritu* of *basant* and *greeshma* of *adan kala* and *Varsha ritu* of *visargkala*. Similarly when the sun in southern hemisphere between 23rd september to 21st march there is cold season in North hemisphere, which consist of 2 *ritusharad* and *hemant* of *visarg kala* and *shishir* of *adan kala*.⁶ There is periodic changes in *dosha's sanchay, prakop, prasar* in day and night and six seasons.⁷

Dosha	Vata	Pitta	Kapha
<i>Sanchay</i>	<i>Greeshm&madhyan</i>	<i>Varsha&4th prahar of day</i>	<i>Hemant Usha kala</i>
<i>Prakop</i>	<i>Varsha & aparanh</i>	<i>Sharad & ardharatri</i>	<i>Basant & purvaanh</i>
<i>Prasham</i>	<i>Sharad & ardharatri</i>	<i>Basant & purvaanh</i>	<i>Greeshm & aparanh</i>

Physiological and Pathological effect of doshas on physical appearance ^{8,9}

○ Vata dosha-

Physiological effect	Pathological effect
<i>Raukshya</i> (dryness)	<i>Nakha bhed</i> (cracking of nails)
<i>Laghuta</i> (lightness)	<i>Vipadika</i> (cracking of sole/heel)
<i>Tanuta</i> (thin)	<i>Vamanatva</i> (dwarfism)
<i>Vishadta</i> (non-sliminess)	<i>Osthabhed</i> (cracking of Lips)
<u><i>Sheetalta</i> (coldness)</u>	<i>Danth shaithilya</i> (loose teeth)
	<i>Vartmstambh</i> (Stiffness in eyelids)
	<i>Vartma sankoch</i> (contraction in eyelids)
	<i>Akshivyudas</i> (Squint)
	<i>Bhrvyudas</i> (twisting of eyebrows)
	<u><i>Keshbhoomisfutanam</i> (cracking of scalp)</u>
	<u><i>Ardit</i> (facial paralysis)</u>
	<u><i>Raukshya</i> (dryness)</u>
	<u><i>Parushya</i> (coarseness)</u>
	<u><i>Shyav-Arunavbhaasta</i> (blackish-reddish lustre)</u>
	<u><i>Sankoch</i> (wrinkles)</u>
	<u><i>Raukshya</i> (dryness)</u>

○ Pitta dosha-

Physiological effect	Pathological effect
<i>Ushma</i> (warmth)	<i>Osha-chosh-dav-davathu-paridaah</i> (heating or burning sensation of various kind)
<i>Taikshnya</i> (sharpness)	<i>Twagdaah</i> (burning sensation)
<i>Dravatva</i> (hydration)	<i>Twagavdaran</i> (tearing of skin)
<i>Natisneh</i> (not too oily)	<i>Charma –dalan</i> (thickening of skin)
<i>Varn</i> (color of skin)	<i>Raktakotha</i> (urticarial patch)
<i>Prasad</i> (cleanliness)	<i>Raktavisphot</i> (pustule)
<i>Prabha</i> (glow/ lustre)	<i>Raktmandal</i> (erythematous patch)
	<i>Haritwa</i> (greenish discoloration)
	<i>Neelika</i> (bluish discoloration)

	<i>Haridwa</i> (yellowish discoloration)
	<i>Kasha</i> (fast spreading pustule)
	<i>Kleda</i> (excess oil or watery)
	<i>Swedadhikya</i> (perspiration)
	<i>Kandu</i> (itching)
	<i>Kotha</i> (sloughing)
	<i>Straav</i> (discharge)

○ Kapha dosha -

Physiological effect	Pathological effect
<i>Sneh</i> (unctuousness)	<i>Maladhikya</i> (excess dirt)
<i>Shaitya</i> (coldness)	<i>Galagand</i> (nodular growth in throat)
<i>Sthairya</i> (stability)	<i>Atishtool</i> (Obesity)
<i>Picchil</i> (sliminess)	<i>Uadard</i> (urticarial patch)
<i>Matsarya</i> (softness)	<i>Shwetata</i> (excess whitening)
<i>Shwetya</i> (whiteness)	<i>Kandu</i> (itching)
	<i>Sheetata</i> (excess cold)
	<i>Supti</i> (loss of sensation)
	<i>Kleda</i> (excess oil or watery)

Various kind of hair and skin disease described under as *kshudra* and *shisoroga*, and mainly in *kushta*.

○ Dominance of dosh in various *kshudra* rogas of skin and hair ¹⁰

No.	Disease	Dominant dosha
<u>1.</u>	<i>Indralupta</i>	<i>Pitta ,vata</i>
<u>2.</u>	<i>Khalitya</i>	<i>Pitta ,vata,associated with kapha</i>
<u>3.</u>	<i>Palitya</i>	<i>Pitta</i>
<u>4.</u>	<i>Paaddari</i>	<i>Vata</i>
<u>5.</u>	<i>Darun/daarunak</i>	<i>Vata, kapha</i>
<u>6.</u>	<i>Arunshika</i>	<i>Kapha ,Rakta</i>
<u>7.</u>	<i>Yuvanika</i>	<i>Kapha,rakta,vata</i>
<u>8.</u>	<i>Jatumani</i>	<i>Kapha,rakta,vata</i>
<u>9.</u>	<i>Mashak</i>	<i>vata</i>
<u>10.</u>	<i>Til-kalak</i>	<i>Vata,pitta</i>
<u>11.</u>	<i>Nyach-vyang</i>	<i>Vata ,pitta</i>
<u>12.</u>	<i>Nilika</i>	<i>Vata,pitta</i>
<u>13.</u>	<i>vidarika</i>	<i>Vata,pitta,kapha</i>
<u>14.</u>	<i>Chippa,kunakh</i>	<i>Vata,pitta</i>
<u>15.</u>	<i>Agnrohini</i>	<i>Vata,pitta,kapha</i>
<u>16.</u>	<i>Gandhmala</i>	<i>Pitta</i>
<u>17.</u>	<i>Kasha</i>	<i>Vata,pitta,kapha</i>
<u>18.</u>	<i>Gardhabhika</i>	<i>Vata,pitta</i>
<u>19.</u>	<i>Indraviddha</i>	<i>Vata,pitta</i>
<u>20.</u>	<i>valamika</i>	<i>Vata,pitta,kapha</i>
<u>21.</u>	<i>Vivartika</i>	<i>pitta</i>

CHANGES IN CLIMATE IN LAST CENTURY

Global warming is the increase in the average temperature of Earth's near-surface air and oceans since the mid-20th century. According to the 2007 Fourth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC), global surface temperature has been increased 0.74 ± 0.18 °C (1.33 ± 0.32 °F) during the 20th century.¹¹ Projections in the latest IPCC report indicate that the global surface temperature is likely to rise a further 1.1 to 6.4 °C (2.0 to 11.5 °F) during the 21st century.

Melting of polar Ice caps, the 'loss of mass' which refers to the total amount of ice that melts and is lost as liquid water from the Antarctic

Ice sheets in year between 2006 to 2016 tripled compared to 10 years.

Greenland saw a doubling of mass loss over the same period.¹² Water level in ocean is rising continuously between 1870 and 2000, the sea level increased by 1.7 millimeters per year on average, for a total sea level rise of 221 millimeters (0.7 feet or 8.7 inches). And the rate of sea level rise is accelerating. Since 1993, NASA satellites have shown that sea levels are rising more quickly, about 3 millimeters per year, for a total sea level rise of 48 millimeters (0.16 feet or 1.89 inches) between 1993 and 2009.¹³

Impact on Ecosystem-

More importantly, perhaps, global warming is already putting pressure on ecosystems, the plants and animals that co-exist in a particular climate zone, both on land and in the ocean. Warmer temperatures have already shifted the growing season in many parts of the globe. The growing season in parts of the Northern Hemisphere became two weeks longer in the second half of the 20th century. Spring is coming earlier in both hemispheres. This change in the growing season affects the broader ecosystem.¹⁴

RELATION BETWEEN UNIVERSE AND HUMAN

Person is equal to the universe whatever entities formed in the universe same are in the person and vice-versa. The aggregate of six constituents is

termed as universe (macrocosm) such as *prithvi, ap, tejas, vayu, akash* and *Brahmn*, these very six constituents aggregated are termed as 'person'.¹⁵ The maxim of microcosm and macrocosm/ "law of Universal uniform" authenticates and validates the *lokapurushsatmya*.¹⁶

DISCUSSION AND CONCLUSION

The consequences of climate change we have discussed like Global warming, disturbance in seasons, disturbance in ecosystem, melting of polar ice caps other natural calamities are described as *poorvarupa* and features of *janpadopdhwan*, and *vikritvayu, vikrit jal, vikrit ritu, vikrit kala* and *desha* are components of it. *Janpadopdhwan* is unfavorable for health. Because of Global warming the temperature of earth its surface is increasing, *pitta* is only *dosha* which has *ushna* property kapha is *sheet* and *vata* is *anushnasheet*. *Vata* has *yogvahi* property which is exclusively found in it. The heat increases the *pitta* and reduces and *kapha* and when vitiated *pitta* associates with *vata*, *vata* also becomes *ushn* because of its *yogvahi* property, and this phenomenon vitiates the *tridosha*. *Teja* either from outer surface or trapped inside body is mentioned in *nidan* of *Indralupta, khalitya* and *palitya*, *Aatap* and *sheet-ushnavyatasat* are mentioned in etiological factors of *kushta*. Most of *kshudra roga* of skin has *pitta* dominance. It is difficult to pin a single climate change event's effect on *saundarya* but evidence and principle of Ayurved like '*lokapurushsatmya*' and '*samanyavridhikaranam*' suggests that climate change is already influencing the skin and *saundarya* of person.

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