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Preventive Effect of *Yogasana* (Yogic poses), *Pranayam* (Yogic Breathing Techniques) and *Yoga Nidra* on High-Risk People for Cancer: A Critical Review

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Abstract

The global cancer burden has been rising day by day due to increase the incidence of high-risk factors for cancer. Chronic alcoholism, tobacco chewing, tobacco smoking, unhealthy diet patterns, unbalanced hormones, obesity, excessive exposure of radiation and sunlight, carcinogenic environmental substance and food additives, chronic inflammation, immunosuppression, infectious agents and advanced age these are some high-risk factors for cancer. Since prevention is better than cure, several preventative measures have been implemented to help prevent cancer. Quitting smoking, avoiding excessive body fat and engaging in regular physical activity are the most prevalent factors that minimize cancer risk. *Yogasana* (yogic poses), *Pranayam* (yogic breathing techniques) and *Yoga Nidra*, which have been practiced in India since ancient times, have played a significant role in cancer prevention. Yogic Prayer, Shodhana Kriyas (yogic cleansing techniques) like *Jalaneti* (nasal cleansing yogic practice), *Kapalbhati*, *Yogic Sukshma Vyayama*, *Yogasana* like *Tadasana* (mountain pose), *Katichakrasana* (standing spinal twist), *Vajrasana* (thunderbolt pose), *Ardha Ushtrasana* (half camel pose), *Shashankasana* (the hare pose), *Bhujangasana* (cobra pose), *Balasana* (child pose), *Supta Baddha Konasana* (reclining bound angle pose) and *Shavasana* (corpse pose), *Pranayam* like *Nadishodhana* (alternate nostril breathing), *Bhramari* (bumblebee breathing), *Dhyan* (Meditation) like *Yoga Nidra* should be beneficial to prevent the cancer and preventive

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management. Thus, *Yogasana*, *Pranayam* and *Yoga Nidra* can help to prevent cancer by facilitating in the discontinuation of tobacco use, the withdrawal of alcohol and opioid use, the reduction of obesity, the maintenance of a healthy oxygen level in the breathing, the reduction of oxidative stress that causes cancer and the prevention of onco-genetic mutation in cancer-prone individuals. However, further scientific data is required.

Keywords

Yogasana (Yogic Poses); *Pranayam* (Yogic Breathing Techniques); *Yoga Nidra*; Prevention; Cancer

Introduction

Chronic alcoholism, tobacco chewing, tobacco smoking, unhealthy diet patterns, unbalanced hormones, obesity, excessive exposure of radiation and sunlight, carcinogenic environmental substance and food additives, chronic inflammation, immunosuppression, infectious agents and old age these are some high-risk factors for cancers [1]. Drinking alcohol can increase risk of cancer of the mouth, throat, esophagus, larynx (voice box), liver and breast [2]. Tobacco use causes many types of cancer, including cancer of the lung, larynx (voice box), mouth, esophagus, throat, bladder, kidney, liver, stomach, pancreas, colon and rectum and cervix, as well as acute myeloid leukemia [3].

Environmental Carcinogens such as Aflatoxins, Aristolochic Acids, Arsenic, Asbestos, Benzene, Benzidine, Beryllium, 1,3-Butadiene, Cadmium, Coal Tar and Coal-Tar Pitch, Coke-Oven Emissions, Crystalline Silica (respirable size), Erionite Ethylene Oxide, Formaldehyde, Hexavalent Chromium Compounds, Indoor Emissions from the Household Combustion of Coal Mineral Oils: Untreated and Mildly Treated Nickel Compounds, Radon, Second-hand Tobacco Smoke (Environmental Tobacco Smoke), Soot, Strong Inorganic Acid, Mists Containing Sulfuric Acid, Thorium, Trichloroethylene, Vinyl Chloride, Wood Dust, increased the Cancer Risk [4].

People with chronic inflammatory bowel diseases, such as ulcerative colitis and Crohn disease, have an increased risk of colon cancer [5]. People who are obese may have an increased risk of several types of cancer, including cancers of the breast (in women who have been through menopause), colon, rectum, endometrium (lining of the uterus), esophagus, kidney, pancreas and gallbladder [6]. Scientists have studied many additives, nutrients and other dietary components for possible associations with cancer risk. The sun, sunlamps and tanning booths all give off Ultraviolet (UV) radiation. Exposure to UV radiation causes early aging of the skin and damage that can lead to skin cancer.

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The global cancer burden has risen to 19.3 million cases and 10 million cancer deaths in 2020 [7]. As a result, it is important to prevent cancer before it progresses to the point when it is difficult to save mankind from this catastrophe.

The purpose of the Ayurveda science is to preserve the health of the healthy and cure the disease of the unhealthy [8]. Yogasana is beneficial in the management of prevention of Cancer and many Yogasana like Surya Namaskar (Sun salutations), Tadasana (mountain pose), Ushtrasana, Vakrasana (twisted pose), Gomukhasana (cow face yoga pose), Bhujangasana, Shalabhasana (Locust pose), Dhanurasana (bow pose), Simhasana (lion pose), Shavasana has recommended by Ministry of AYUSH, Govt. of India [9]. Pranayam is the conscious awareness of breath and it refers to breathing exercises that remove physical and mental impediments in our bodies with the breath. Pranayam has been shown to considerably reduce oxidative stress, such as free radicals and lipid peroxidation products, as well as significantly raise the level of antioxidant enzymes. Pranayam not only reduces oxidative stress but also enhances an individual's antioxidant level [10]. This Research Paper will focus on the critical discussion of the Preventive Effect of Yogasana, Pranayam and Meditation on High-Risk People for Cancer.

Aim

To critically examine and debate the preventive effects of Yogasana, Pranayam and Yoga Nidra on high-risk people with cancer.

Objectives

1. To evaluate, elaborate the role of Yogasana, Pranayam and Yoga Nidra for high-risk people of cancer
2. To provide the protocol of Yogasana, Panayam and Yoga Nidra for high-risk people of cancer

Material and Method

This research paper is based on the critical review of preventive effect Yogasana, Pranayam and Yoga Nidra on high-risk people of cancer. Yoga Literature has been collected from Guidelines and Training Manual on Integration of AYUSH (Ayurveda) With National Program for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), Official Guidebook for Yoga Professionals by AYUSH Ministry, Yoga Protocol, Yogic Practices for Management of Cancer, Pantanjali's Yoga Sutra and other related text book

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of Yoga. The Text Book of Modern Medicine related to high-risk people for cancer has been reviewed. The concern Research papers on application of Yogasana, Pranayam and Meditation about prevention of cancer has been also referred.

The Historic Outlook of Yoga

Yoga was first known in India as early as 5000 B.C. according to archaeological evidence. Historical proof of the existence of Yoga can be found in the pre-Vedic period. The main sources from which we acquire information on Yoga practices and related literature throughout this period are the Vedas, Puranas, Upanishads, Smritis, Buddhism, Jainism, Panini and Epics. The concept of yoga has been found at first in Rigveda. Though Yoga was being practiced in the pre-Vedic period, the great Sage Maharshi Patanjali systematized and codified the existing practices of Yoga, in his famous text 'Yoga Sutras' and introduced 'Ashtang Yoga'. The Natha Yogis of Hathayoga tradition like Matsyendranatha, Gorakshanatha, Swatmaram, Gheranda, Shrinivasa Bhatt are some of the great personalities who popularized the Hatha Yoga practices during this period. The Saptanga-yoga of Gheranda Samhita, Shadanga-yoga of Gorakshashatakam, Chaturanga-yoga of Hathayogapradipika, have played the major role to develop the Hatha-yoga. Now in the contemporary time, everybody has conviction about yoga practices towards the preservation, maintenance and promotion of health and Yoga, which practiced and taught in India, entered the Western world in 19th century with the translation of basic yogic texts [11,12].

These different philosophies, traditions, lineages and Guru-shishya paramparas of Yoga lead to the emergence of different traditional schools of Yoga. However, the widely practiced Yoga Sadhanas are Yama (social ethics), Niyama (personal practices), Asana (postures), Pranayam, Pratyahara (turning inward), Dharana (concentration), Dhyana (Meditation), Samadhi/Samyama (Pure bliss), Bandhas (Locking techniques) and Mudras (symbolic gestures) and Shat-karmas. Yama's are restraints and Niyama's are observances. Asanas are used for capable of bringing about stability of body and mind. Pranayam popularly known as Yogic breathing consists in developing awareness of breathing followed by wilful regulation of respiration. Pratyahara indicates dissociation of consciousness from the sense organs. Dharana indicates on body and mind internally. Dhyana means Meditation is a practice which helps in concentration of the body and mind, while Samadhi means integration. Bandhas and Mudras are practices associated with Pranayam, while Shat-karmas are de-toxification procedures, help to remove the toxins accumulated in the body [13].

'Yoga-chitta-vritti-nirodhah' means Yoga is the process by which the state of mind or state of thoughts should completely confining [14]. The term 'Yoga' is derived from the Sanskrit words 'YUJ', meaning 'to join' or 'to unite'. As per Yogic scriptures the practice of Yoga leads to the union of individual consciousness with that of the Universal Consciousness, indicating a

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perfect harmony between the mind and body. Yoga is one of the most powerful drugless systems of treatment. It is having its own concept of wellness which has been scientifically understood and presented by many. Yoga can be adopted as lifestyle for promoting our physical and mental health [15].

Yoga is not only form of physical exercise, but it ensures mental health and physical fitness. By doing physical exercises, one can develop only body muscles. But through Yoga, one achieves the conditioning of even all the internal organs like - heart, brain, spleen, liver, lungs, intestines and all the glands, like - thyroid, pituitary and penial gland of the brain, function better. Through meditation, breathing exercises (called Pranayams); One can get rid of all stress and live a healthy life [16].

High Risk Factor-People of Cancer

Cancer-causing compounds are found in several smokeless tobacco products. When the levels of these carcinogens are higher, the risk of cancer increases. Tobacco smoke contains a variety of compounds that are hazardous to both smokers and non-smokers. At least 69 of the 250 known toxic compounds in tobacco smoke can cause cancer (Table 1 and 2) [18]. Ethyl alcohol, commonly known as alcohol, is a proven carcinogen that raises the risk of cancers such as breast, liver, mouth, throat, oesophagus and intestine. Heavy drinking may also increase the risk of stomach cancer [19]. Quid chewing has been identified as a separate risk factor for oral cancer. The causal relationship between chewing quid and cancer has been revealed [20]. Opium users have a significantly higher risk of developing cancers in different organs of the respiratory, digestive and urinary systems and the CNS [21]. Occupational exposures in painters are usually associated with the risk of lung cancer [22]. Asbestos is a naturally occurring mineral and carcinogen and long-term exposure to Asbestos dust may result in Respiratory Tract Cancer. Asbestos exposure raises the risk of lung cancer, mesothelioma, laryngeal and ovarian cancer and pulmonary fibrosis [23].

Quitting smoking, reducing extra body fat and engaging in regular physical activity are the most common factors that minimize cancer risk (Fig. 1).

S. No.	High Risk Factor / People	Organ Site
1	Alcoholic beverages, Betel quid with tobacco, Human papillomavirus type 16, Smokeless tobacco, Tobacco smoking	Oral cavity, Pharynx
2	Isopropyl alcohol manufacture using strong acids, Leather dust Nickel compounds, Radium-226 and its decay products Radium-228 and its decay products, Tobacco smoking Wood dust	Nasal cavity and paranasal sinus
3	Epstein–Barr virus, Formaldehyde Salted fish, Chinese-style Wood dust	Nasopharynx
4	Acid mists, strong inorganic, Alcoholic beverages, Asbestos (all forms) consumption of Opium, Tobacco smoking	Larynx
5	Asbestos (all forms), Erionite, Fluoro-edenite, fibrous amphibole, occupational exposure as Painter	Pleura or peritoneum
6	Acheson process (occupational exposure), Aluminum production, Arsenic and inorganic arsenic compounds, Asbestos (all forms), Beryllium and beryllium compounds, Bis(chloromethyl)ether; chloromethyl methyl ether (technical grade), Cadmium and cadmium compounds, Chromium (VI) compounds, Coal, indoor emissions from household combustion, Coal gasification, Coal-tar pitch, Coke production, Diesel engine exhausts, Gamma-radiation, Hematite mining (underground), Iron and steel founding, MOPP (vincristine-prednisone-nitrogen mustard-procarbazine mixture), Nickel compounds, Opium, Outdoor air pollution, particulate matter in Paint, Plutonium, Radon-222 and its decay products, Rubber manufacturing industry Silica dust, crystalline Soot, Sulfur, mustard, Tobacco smoke, second hand Welding fumes, X-radiation.	Lung
7	Acetaldehyde associated with consumption of alcoholic beverages, Betel quid with tobacco, Betel quid without tobacco, Smokeless tobacco, Tobacco smoking, X-radiation, gamma-radiation	Oesophagus
8	Helicobacter pylori , Rubber manufacturing industry, Tobacco smoking, X-radiation, gamma-radiation	Stomach
9	Aflatoxins, Alcoholic beverages, Estrogen–progestogen contraceptives, Hepatitis B virus, Hepatitis C virus,	Liver (hepatocellular carcinoma)

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	Plutonium Thorium-232 and its decay products, Tobacco smoking (in smokers and in smokers' children)	
10	Vinyl chloride	Liver (angiosarcoma)
11	Thorium-232 and its decay products	Gall bladder
12	1,2-Dichloropropane, Clonorchis sinensis, Opisthorchis viverrine	Biliary tract
13	Smokeless tobacco, Tobacco smoking	Pancreases
14	Alcoholic beverages, consumption of Processed meat, Tobacco smoking X-radiation, gamma-radiation	Colon and rectum
16	Human immunodeficiency virus type 1, Human papillomavirus type 16	Anus
17	Estrogen menopausal therapy, Estrogen–progestogen menopausal therapy Tamoxifen	Corpus uteri (endometrium)
18	Diethylstilbestrol (exposure in utero), Estrogen–progestogen contraceptives, Human immunodeficiency virus type 1, Human papillomavirus, Tobacco smoking	Uterine cervix
19	Diethylstilbestrol (exposure in utero), Human papillomavirus type 16	Vagina
20	Asbestos (all forms), Estrogen menopausal therapy, Tobacco smoking	Ovary
21	Alcoholic beverages, Diethylstilbestrol, Estrogen–progestogen contraceptives, Estrogen–progestogen menopausal therapy, X-radiation, gamma-radiation	Breast
22	Tobacco smoking, Trichloroethylene X-radiation, gamma-radiation	Kidney
23	Aristolochic acid, plants containing Phenacetin, analgesic mixtures containing Tobacco smoking	Renal pelvis and ureter
24	Aluminum production, 4-Aminobiphenyl Arsenic, and inorganic arsenic compounds, Auramine production, Benzidine, Chlornaphazine, Cyclophosphamide Magenta production, 2-Naphthylamine, consumption of Opium, occupational exposure as Painter, Rubber manufacturing industry, Schistosoma haematobium, Tobacco smoking, ortho-Toluidine X-radiation, gamma-radiation	Urinary bladder
25	Azathioprine Benzene, Busulfan, 1,3-Butadiene, Chlorambucil Cyclophosphamide, Cyclosporine, Epstein–Barr virus, Etoposide with cisplatin and bleomycin Fission products, including strontium-90, Formaldehyde, Helicobacter pylori, Hepatitis C virus,	Leukaemia/lymphoma

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	Human immunodeficiency virus type 1, Human T-cell lymphotropic virus type 1, Kaposi sarcoma, herpesvirus, Lindane Melphalan, MOPP (vincristine-prednisone-nitrogen mustard-procarbazine mixture), Pentachlorophenol Phosphorus-32, as phosphate Rubber manufacturing industry, Semustine [1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea, or methyl-CCNU], Thiotepe Thorium-232 and its decay products, Tobacco smoking, Treosulfan X-radiation, gamma-radiation	
26	Polychlorinated biphenyls Solar radiation Ultraviolet-emitting tanning devices	Skin (melanoma)

Table 1: High risk factor / people of cancer by organ site [17].

S. No.	Organ Site Involved	Factor which Reduces the Cancer
1	Oral cavity, Pharynx, Uterine cervix, Larynx, Lung, Urinary bladder	Quitting smoking
2	Stomach	Quitting smoking, Absence of excessive body fat (gastric cardia)
3	Thyroid, Liver (hepatocellular carcinoma), Gall bladder, Ovary	Absence of excessive body fat
4	Pancreases, Kidney	Absence of excessive body fat, Quitting smoking
5	Oesophagus	Absence of excessive body fat (adenocarcinoma), Quitting smoking (squamous cell carcinoma)
6	Colon and rectum	Absence of excessive body fat, Regular physical activity
7	Breast	Absence of excessive body fat (postmenopausal), Regular physical activity

Table 2: Factor which reduces the cancer by organ site.

Figure 1: Factors that minimize cancer risk.

Yoga Protocol useful to prevent the Cancer

Suryanamaskar and Bhujangasan are helpful in preventing cancer in people who have high risk factors such as obesity, tobacco use, smoking and asbestos exposure. Except for obesity, Pashchimotasan and Marjari Asana are beneficial in preventing cancer in high risk factors such as tobacco smoking and asbestos dust. Pawanmuktasana is beneficial in controlling respiratory vitiation caused by Tobacco Smoke and dust Asbestos, which can help avoid cancer in the future. Halasana and Matsendrasana are effective for controlling obesity (fat deposition) and dust-induced respiratory vitiation, both of which can help prevent cancer in the future. Padahastasana, Sarvangasana, Ushtrasana, Drutahalasana, Shashank-Bhujangasana are useful to avoid obesity, Setubandhasana, Vrikshashana are useful to prevent Tobacco Smoking caused vitiation and Dhanurasana and Ushtrasana are useful to prevent vitiation due to dust such as asbestos. Jala Neti and Kunjal are Shatkarma, which are Yogic practises involving body purification to prevent cancer, namely cancer caused by Obesity, Tobacco, Smoking and

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Asbestos dust. To prevent cancer caused by Obesity, Tobacco, Smoking and Asbestos dust, Nadhi-Shodhan and Bhastrika Pranayam should be used. Yoga Shavasan and Yoga Nidra may be beneficial in reducing stress-related harm (Table 3 and 4) (Fig. 2).

S. No.	High Risk People	Name of Ashtang Yoga				
		Asana	Shatakriya	Pranayam	Bandha/Mudra	Shithilikaran (Cool down)
1	Common	Suryanamaskar, Supta Bandh konasana, Marjari Asana (cat pose), Sukhasana (easy pose), Viparitkarani (legs up the wall pose), Setubandhasana (bridge pose), Virbhadrasana (Warrior pose) and Shavasana	-----	Nadhi-Shodhan (alternate nostril breathing), Bhastrika (breath of fire) and Bhramari	Apana-Vayu Mudra and Mahamudra	Yaugik Shavasana, Yoga Nidra
2	Obesity	Suryanamaskar, Ardha Matsendrasan (half fish pose), Paschimottanasana (seated forward bend), Bhujangasan, Dhanurasan (bow pose), Matsyasan, Halasana (plow pose), Tadasana, Kati- Chakrasana (standing spinal twist), Padahastanasana (hand to foot pose),	Jala Neti, Vaman (therapeutic emesis) Dhauti,	Nadhi-Shodhan, Bhastrika and Bhramari	-----	-----

		Sarvangasana (shoulder stand), Ushtrasana, Drutahalasana (dynamic plough pose), Shashank- Bhujangasana				
3	Tobacco Smoking	Suryanamaskar, Pawanmuktasana (wind relieving pose), Pashchimotasan, Bhujangasan, Suptaudarkashana, Setubandhasana, Marjari Asana, Vrikshashana	Jala Neti,	Nadhi- Shodhan, Bhastrika, Bhramari and Ujjayi (ocean breathing)	Prana Mudra, Mahamudra, Yoga Mudra and Khechari Mudra	-----
4	Asbestos dust	Suryanamaskar, Pawanmuktasana, Pashchimotasan, Bhujangasan, Halasana, Dhanurasana, Ardha Mtsendrasana, Ushtrasana, Marjari Asana	Jala Neti, Sutrant, Kapal bhati and	Nadhi- Shodhan, Surya Bhedan (right nostril breathing) and Bhastrika	-----	-----

Table 3: Yoga protocol useful to prevent the cancer [24].

S. No.	Name of Kriya	Name of Practice	Duration
1	Yogic Prayer		1 min
2	Shodhana Kriyas	Jalaneti (twice a week) and Kapalbhati (3-5 rounds with 15-20 strokes)	7 mins
3	Yogic Sukshma Vyayama (3 rounds each)	Uchcharana-sthalattha Vishuddh-chakra-shuddhi Buddhi totha Dhurti-shakti-vikasaka Smarana-shakti-vikasaka Vaksha-sthala-shakti-vikasaka Griva Shakthi Vikasaka -1,2, &3	10 mins
4	Yogasana	Tadasana, Katichakrasana, Vajrasana, Ardha Ushtrasana, Shashankasana, Bhujangasana, Balasana, Supta Baddha Konasana and Shavasana	15 mins
5	Pranayam	Nadishodhana Pranayam (5 rounds) Bhramari Pranayam (3 rounds)	5 mins
6	Dhyan (Meditation)		7 mins
	Total Duration		45 mins

Table 4: Yogic practices for prevention and preventive management of cancer [25].

Yogic Prayer, Shodhana Kriyas like Jalaneti, Kapalbhati, Yogic Sukshma Vyayama, Yogasana like Tadasana, Katichakrasana, Vajrasana, Ardha Ushtrasana, Shashankasana, Bhujangasana, Balasana, Supta Baddha Konasana and Shavasana, Pranayam like Nadishodhana, Bhramari, Dhyan like Yoga Nidra should be beneficial to prevent the cancer.

Figure 2: Yogic practicing process.

Special Hazards Associated with Yoga

Yoga has several unique risks linked with doing poses during Yoga. Falling risk while performing upside-down Yoga poses such as Shirshasana or Sarvangasana. Muscle pulling is an ergonomic concern when performing difficult positions with a stiff body, such as

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Paschimottanasana. When performing challenging postures like as Sarvangasana, there is a risk of neck pain. Severe back pain or a slip disc risk while performing challenging poses such as Halasana. Sprained ankle when performing some asanas, such as Vajrasana [26].

Safety and Precautionary Measures during Yoga

The following are some precautions to take when doing yoga. The first and most important precaution is to only practice Yoga under the guidance of a professional Yoga Instructor. Before beginning Yoga, seek medical advice, especially if you are over the age of 30. The body's flexibility limit should not be exceeded during the push beyond. The harder poses should not be held for extended periods of time during yoga. Yoga should not be attempted shortly after eating or drinking anything; instead, let at least 3 to 5 hours after the last meal [27].

Discussion

Quitting tobacco smoking for 1-4 years resulted in a head and neck cancer risk reduction, while a beneficial was only observed after 20 years of quitting of alcohol [28].

Chronic stress raises the risk of almost all diseases, including cancer. Meditation, such as Yoga Nidra, counteracts the effects of stress by creating a relaxation response. During meditation, blood pressure and muscular tension fall in tandem with stress chemicals such as cortisol and adrenaline. Participants reported considerably lower perceived stress at the end of the trial, showing that yoga nidra may be an effective intervention in managing and preventing workplace stress [29]. Stress is an individual's cognitive or emotional reaction to any situation that necessitates adjustment. Yoga nidra practice also decreases tension and anxiety [30].

The most common factors that minimize cancer risk are the absence of excess body fat and regular physical activity. It means that those who are obese and do not exercise are more likely to develop cancer in the future. The clinical examination showed that frequent practice of yoga activities significantly reduces female students' weight and enhances their performance [31]. Yoga instruction from a certified yoga instructor is preferable for improving posture and weight loss. Yoga therapy has been shown to increase women's quality of life and reduce body weight [32].

Yoga is intended to be a lifelong activity that can potentially reinforce smoking cessation after formal smoking cessation treatment has ended. It also strengthens the effects of CBT by providing an alternative means of coping with stress and cigarette cravings and it has been linked to improvements in mood and quality of life [33]. The study found that Alternate Nostril Breathing (ANB) reduces the intensity of smoking cravings immediately. It also cleans the

lungs and improves the Pulmonary Function Test (PFT), as well as reducing smoking cravings and withdrawal symptoms. It can also help smokers with psychiatric problems who are resistant to medication [34]. Smoking and dust from numerous sources, such as asbestos dust, cause respiratory diseases such as COPD and bronchial asthma, as well as cancer. Yogic practices are thought to be an excellent exercise for maintaining good health, as well as having a profound effect on lung functions and the prevention, control and rehabilitation of many respiratory disorders. The study found that Pranayam can benefit people with moderate to severe COPD [35]. Yoga may be an effective adjunct therapy for smoking cessation in women, since participants in the yoga programme reported lower anxiety and improved felt health and well-being when compared to controls [36]. A meta-analysis found that yoga training can enhance lung function and functional exercise capacity in COPD patients when compared to standard therapy [37]. According to the findings of the study, four weeks of Yoga practice can help reduce depression symptoms and improve quality of life in drug users [38].

Yoga was found to be useful in lowering depression and improving quality of life among alcoholics [39]. A recent study on opioid dependence syndrome reported significantly higher improvement in mood status and Quality of Life (QoL) in patients in yoga group as compared to routine hospital care [40]. The production of Reactive Oxygen Species (ROS) leads to the overexpression of JUN (an oncogene) which is involved in lung cancer [41]. To respond to deleterious effects of oxidative stress it is very crucial to maintain the required level of antioxidants in the body. Level of Glutathione (GSH) is a major non-enzymatic intracellular marker of antioxidant status. Yoga practices including Yogasana, Pranayam and meditation for three months resulted in 2.1-fold increase in GSH among healthy university students [42].

Total Antioxidant Status (TAS) is also an important antioxidant marker. The level of TAS increased significantly following yogic practice which indicates a marked improvement in the overall cellular antioxidant level [43]. Intervention of Yoga and Meditation results in decline in free radical levels in blood and lower seminal oxidative stress and reduces oxidative damage to both mitochondrial and nuclear genome which culminates in lower mutagenic load in DNA. Regular practice of yoga and meditation could have a buffering effect on age-dependent DNA damage and repair capacity [44]. The mean levels of 8-OH2dG, ROS, cortisol and IL-6 were significantly decreased while the mean levels of TAC, telomerase activity, β -endorphin, BDNF and sirtuin-1 were significantly increased post Yogic Practices (Yoga and Meditation). Though the finding was not significant, the mean level of telomere length was found increased [45]. Intervention of yoga and meditation causes reversal of markers of aging, mainly oxidative stress, telomerase activity and oxidative DNA damage [46]. Yoga should be considered one of the therapeutic methods for relieving stress, as regular yoga training can decrease free radical formation and increase antioxidant system [47]. Few months after succeeding the Yogasana, Pranayam and Meditation, it gives physical and mental balance, relieves mental tension,

anxiety, lessen and prevent the obesity, improvement of cellular function, regularization cellular oxidation and genetic repair [48].

Conclusion

Smokeless tobacco abused people, tobacco smoker, alcoholic beverages abused people, obesity, people who has chew the betel quid with or without tobacco, opium users, the labor who are exposing to the all-forms asbestos, painter, labor who has working in the rubber manufacturing industry these are some most common high-risk factor / people for cancers.

Yogasana, pranayam and yoga nidra can help to prevent the cancer by helping the cessation of tobacco, cessation of alcohol and opioid, reducing obesity, maintaining well oxygen level in the respiration, reducing the oxidative stress causing cancer and preventing the onco-genetic mutation of high-risk people for cancer. But till it needs more scientific evidences.

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