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# A novel rejuvenation program for cancer patients at Kaivalyadhama, India

Lee Majewski<sup>1</sup>, Ananda Balayogi Bhavanani<sup>2</sup>

<sup>1</sup>Kaivalyadhama Yoga Institute, Lonavala, Maharashtra, India, <sup>2</sup>Centre for Yoga Therapy, Education and Research (CYTER), Mahatma Gandhi Medical College and Research Institute (MGMCRI), Pillayarkuppam, Pondicherry, India

## ABSTRACT

**Background:** The modern intensive treatment for cancer leaves the patients physically and mentally exhausted by the end of it. There is great potential for Yoga, the original mind-body medicine, in such a situation as it conjointly emphasizes body, mind, and spirit, which may be particularly useful for enhancing patients' social and spiritual well-being. Some studies have reported the effectiveness of Yoga, meditation, and mindfulness as a rehabilitative and palliative therapy in various types of cancer.

**Objectives:** With the above background in mind, we created a 3-week residential program for cancer patients to empower them in their journey, "back to health." The curriculum was geared specifically for those who had undergone chemotherapy and/or radiation.

**Methods:** The program utilized the sister life sciences of Yoga and Ayurveda with a healthy dose of self-education to assist patients in their recovery from the devastation of cancer and its modern treatment. The modes of reintegration used in this program were designed to specifically address the physical, mental, and psychic (spiritual) needs of the participants. The curriculum included various asanas, kriyas, pranayama, mudras, and bandha, as well as chanting. Ayurvedic treatment based on panchkarma science was designed and applied according to each patient's disposition. An educational component was included to inform patients of potential carcinogenic factors in their life and to change their mindset and attitudes from victimhood to self-empowerment. In order to scientifically validate the program, physiological, biochemical, psychological, and Ayurvedic assessment of tridoshas was carried out.

**Conclusion:** Our special Cancer Rehabilitation Yoga program is expected to have several beneficial effects for those recovering from the aftermath of anti-cancer therapies even at 3-month follow-up. Subjective observations so far reveal that the program led to overall empowerment of the participants.

**Key Words:** Cancer, rehabilitation, Yoga

## INTRODUCTION

The media worldwide is reporting an increase in the incidence of cancer, and the 5-year global cancer prevalence was estimated to be 28.8 million in 2008 with half the burden in areas of very high human development, comprising only one-sixth of the world's population (Bray, Ren, Masuyer, & Ferlay, 2008). Typically,

cancer patients undergo extensive chemotherapy with or without surgery, followed often by radiation (Life After Cancer, n.d.). After such intensive treatment schedules provided by modern medicine, patients are physically exhausted (Life After Cancer, n.d.; Shaw, n.d.). Their bodies are usually subjected to a wide array of chemical poisons, which indiscriminately attack all generative cells resulting in physical exhaustion. However, the toll on the physical body is only one side of the coin as many enter various degrees of depression after completion of intensive treatments (Feuerstein, 2007). Long-term chemotherapy results in chemotherapy-induced cognitive dysfunction or "chemo brain" that may be due to restriction in blood supply to the brain, manifesting as depression, mental confusion, inability to focus, and loss of short-term memory (Life After Cancer, n.d.; Asher, 2011; Phillips et al., 2012). Such states often lead to a state of confusion and crisis in values in the lives of cancer survivors.

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### Address for correspondence:

Dr. Ananda Balayogi Bhavanani, Deputy Director, CYTER, MGMCRI, Pillayarkuppam, Pondicherry - 607 402, India.

E-mail: yognat@gmail.com



| 1 <sup>st</sup> week               | 2 <sup>nd</sup> week | 3 <sup>rd</sup> week |
|------------------------------------|----------------------|----------------------|
| Standing                           |                      |                      |
| Tadasana                           |                      |                      |
| Katichakrasana- 1, 2               | (waist rotation)     |                      |
| Parvatasana                        |                      |                      |
| Side bending chakrasana            | Konasana             | Simple Trikonasana   |
| Natarajasana- 1 <sup>st</sup> step |                      | Natarajasana         |
|                                    | Padhastasana-90°     | Padhastasana         |

### c. Following pranayama

| Practices                          | 1 <sup>st</sup> week           | 2 <sup>nd</sup> week     | 3 <sup>rd</sup> week                     |
|------------------------------------|--------------------------------|--------------------------|------------------------------------------|
| Kapalabhati                        | 40-40-40                       | 60-60-60                 | 80-80-80                                 |
| Lung expansion skills              | Upper lobe- 8<br>Lower lobe- 8 | 10-12                    | 15-20                                    |
| Puraka-rechaka                     | Bhramari- 8-10                 | 10-12                    | 15-20                                    |
| Easy kumbhaka                      | Ujayi- 8-10<br>Shitali- 8-10   | Bhastrika-<br>3-5 rounds | 8-10 rounds<br>Bhastrika<br>10-12 rounds |
| Gradual development<br>of Kumbhaka |                                |                          | 5-6 rounds                               |

Bandha-Mudras: Three basic bandhas, ashwini mudra, and brahmamudra

We used simplified asanas and increased the complexity over 3 weeks, always being mindful of the following:

- to meet individual client level of tolerance,
- of skin incisions and peripheral neuropathy, and
- of poor balance issues.

The pranayama also had to be modified according to specific cancer. So, those with colon cancer would replace Kapalabhati with alternating nostril breathing (Nadhi Shoddhana). These psycho-physical practices of Yoga enable participants to get to “know their bodies” better and create a positive sense of oneness between breath and body movements.

2. **Chanting:** Chanting is widely used in the Yoga tradition as it creates a sense of inner peace that is conducive to healing. When we chant, we are in the “now” and this induces empowerment as we begin to take charge of our thoughts, feelings, and actions (Bhavanani, 2011b). For our participants, we used healing mantras culled from different traditions. In the first week, the Ra Ma Da Sa from Kundalini Yoga tradition was used as it also provides a beautiful musical experience. It was noticed that even those who do not usually like chanting enjoyed the beautiful music and mantra intonations. In the second week, we switched to chanting 108 rounds of the Maha Mrityunjaya (Om trayambakam) mantra as this is traditionally believed to reduce the fear of death and create a sense of life and living in the individual. In the third week, we used 108 rounds of Omkara as the Pranava AUM has been documented to

be useful in stress management and in creating an inner sense of relaxation manifested as reduced heart rate (HR) and blood pressure (BP) (Bhavanani, Madanmohan, Sanjay, & Vithiyalakshmi, 2012).

3. **Ayurveda:** Every morning patients had Ayurvedic treatment based on panchkarma science. The treatment was designed and applied according to each patient’s disposition and was very personalized. It included cleansing practices, full body massage, steam bath, herb oil application, and three daily meals based on sattvic vegan diet. Licensed Ayurvedic therapists administered it under the watchful eyes of two Ayurvedic doctors. Ayurveda is viewed as a sister science of Yoga and, hence, we felt the integration of both ancient sciences can produce a better sense of healing and well-being in the participants.

4. **Education:** The goal of educational component of the program was to inform patients of potential carcinogenic factors in their life and to change their mindset and attitudes from victimhood to self-empowerment. As the International Association of Yoga Therapists (IAYT) definition of Yoga therapy includes the empowerment of the individual (Taylor, 2007), we considered this a vital component of our program and every afternoon, patients spent 90 min learning about Ayurveda treatments, yogic values, environmental toxicity, diet, healthy lifestyle, and yogic tools to maintain health and well-being. Change must come from within, and this was the goal, to elude such a positive change in our participants.

5. **Therapy:** Throughout the program, patients had access to Ayurvedic and allopathic doctors for any consultations if needed. Yogic therapy was also available upon request and generally the participants were eager to discuss their issues with chosen specialists. In addition, toward the end of the program, they worked on creating personal mandalas to help them find a new sense and direction in life.

### Psycho-physio-biochemical parameters

In order to scientifically validate the program, we tested the following parameters with plans of repeating them at 3 months follow-up:

1. **Psychological tests:** Given that a majority of patients end up depressed after completing modern anti-cancer therapy, we used standard tools such as WHO Quality of Life, Hospital Anxiety and Depression Score (HADS), and Profile of Mood States (POMS). These are standardized tools that enable us to document the state of mind, levels of anxiety and depression, and understand the subjective feelings of our participants both before and after the program (Levine & Balk, 2012; Carlson et al., 2003; Cohen et al., 2004; Culos-Reed et al., 2006; Harder et al., 2012). Such tools are used regularly in both in-patient and out-patient scenarios to understand the psychological effects of different

treatment modalities and, hence, their application gives us a hardcore scientific understanding of the subjective changes in our participants.

2. **Physiological tests:** We recorded the HR and BP both before and after the program. Changes in cardiovascular parameters such as HR and BP imply a better capacity to manage stress with a more balanced autonomic nervous system (Funderburk, 1997; Innes et al., 2005; Khalsa, 2004; Yang, 2007; Bhavanani et al., 2012). This can be correlated with the psychological changes, thus enabling us to understand the mind-body connections and positive psycho-physical changes occurring due to the program. We also noted improvement in the physical performance of asanas by both subjective and objective assessment done by the participants and instructors, respectively.
3. **Biochemical tests:** Standardized complete hematological analysis was done with liver and renal profiles. These tests were used to determine changes in red and white blood counts, hemoglobin, liver function, and kidney function due to the program. The psycho-physiological changes measured by previous tests may be corroborated with these to understand better innate mind-body connections right down to the cellular levels too. As the participants had gone through extensive chemo- and radiotherapy, these changes take on an important prognostic value and, hence, are vital to our understanding the benefits of this rejuvenation program.
4. **Ayurvedic tests:** The three fundamental humours or doshas (Vata, Pitta, and Kapha) were evaluated by the resident Ayurvedic doctor in the traditional manner. The tridosha theory of health and disease that developed during the late Vedic period (circa 1500–800 BC) is common to virtually all Indian systems of medicine. Tridosha concept has correlation with pancha mahabhutas (elements of the manifest universe) as well as triguna (inherent qualities of nature). Health is understood to be the balanced harmony of the three humours in accordance with individual predisposition, while disease results from an imbalanced disharmony.

Based on this structure, Kaivalyadhama Yoga Institute has also started a full research project with a multinational research team from India and Canada. There will be three groups involved in this research: Group A, full residential program described above; group B, 3 weeks program of 3 hrs. daily yoga 6 days a week; and group C, control group. We hope to report our result within next 2 years.

## CONCLUSION

This paper was written solely with the purpose of describing the actual structure of the special Cancer Rehabilitation Yoga Program being carried out at Kaivalyadhama, Lonavala. We are still in the process of collecting data of 3-months follow-

up. However, our subjective observations indicate that yoga has benefitted those recovering from the aftermath of anti-cancer therapies in terms of empowerment of the participants. This is likely because they are given the tools, which make them feel in control of their health and well-being. They arrived with long-drawn faces, often with a lot of pain and suffering. In the 3 weeks of the program, their faces slowly lighted up, their moods changed, their friendships become strong, and their outlook on life became optimistic. We hope to corroborate our subjective observations with the results of our scientific assessments in the future.

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