

Impact of Yoga Therapy on Biochemical Deviations- Case Studies

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Abstract

Introduction:

This study aims to understand the efficacy of yoga therapy on biochemical deviations deferent disorders. The disorders studied are Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome, Hyperthyroidism, and hypertriglyceridemia through yoga therapy, the case study was employed as the method of research.

Method:

Each subject volunteered themselves for the intervention, the details of clients who visited a health clinic were involved in the study. They practiced one-hour yoga intervention daily composed of specific asanas, pranayama, bandhas, mudra, and meditation based on the stipulation of the disorder. Yoga intervention was given for MRKH syndrome for 6 months, hyperthyroidism for 6 months, and hypertriglyceridemia for 3 months. Parameters related to their ailment were measured on the baseline of the study and compared to their post-intervention analysis of the data shows that integrated yoga therapy had positive effects in the management of the respective ailments.

Discussion:

In MRKH syndrome, biochemical analysis showed good improvement in functional changes, such as prolactin hormone increased by 59.2%, serum TSH increased by 39.1%, and decrease observed in FSH & LH by 10.9% and 17.8% respectively, which is normal during menarche. Improvements in structural changes like a reduction in weight by 6.1%, Uterus size length increased by 113.8%, width increased by 133.5%, and depth increased by 7.3%. In the case of hyperthyroidism, the biochemical analysis showed a decrease in serum TSH by 54.5%. In hypertriglyceridemia, triglyceride levels decreased by 74.1%.

Conclusion:

This study helps us to understand that integrated yoga therapy (Pranayama, yoga postures and meditation) is efficient in helping to manage the three deferent disorders.

Keywords: Yoga, Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome, Hyperthyroidism, and hypertriglyceridemia, Yoga Therapy

Introduction:

Yoga is the ancient Indian science for healthy living, that combines physical and spiritual disciplines which connect the body, breath, and mind (Gothe et al., 2019). Yoga is a science of health management rather than a method of treating disease (Taneja, 2014). The systematic approaches to overcome the diseases are divided as preventive, promotive, curative aspects of yoga. The application of

systematic technics of yoga for various diseases of the body and mind is called yoga therapy. According to yogic scriptures yoga Vasishta describes the cause of physical disorders stems from the seed in the mind. Adhi (the disturbed mind) is the cause of Vyadhi (the physical disease) is only the manifest effect, in the yogic scheme of things (Serwacki & Cook-Cottone, 2012). Regular practice of yoga promotes strength, endurance, flexibility and improves the quality

of life. Yoga is a form of practice that bridges the mind and body, creating harmony and fitness that involves a combination of physical activity and mindful focus through antaranga yoga on awareness of the self, the breath, and energy (Woodyard, 2011). Today, many people identify yoga only with asana whereas yoga has Astanga i.e., eight limbs, each of which focuses on different aspects of practices. The eight limbs of yoga are Yama (abstinences), niyama (observances), asana (yoga postures), pranayama (breath control), pratyahara (withdrawal of the senses), Dharana (concentration), dhyana (meditation), and samadhi (absorption). The first five work on annamayakosa i.e., the gross body, the last three practices together are known as Antaranga yoga focusing practices on the subtle body.

Yogic texts explain human body is healthy when Vatha, Pita, and Kaphagunas are balanced in the body. Many studies have proved the efficacy of yoga therapy on various disorders proving yoga therapy an adjunct therapy in the management of various disorders. Yoga is assuming importance in improving psychological health and quality of life in the treatment of several lifestyle and psychosomatic disorders. Yoga therapy is basically focused on implying yoga techniques in enhancing the status of health in diseased conditions. Yoga therapy aims to balance the tri-dosha with self-corrective techniques like asanas, pranayama, bandhas, mudras meditation (Ilavarasu et al., 2013). Practicing Yoga regularly has a positive impact on both physiology and personality (Yadav et al., 2012). Many studies had proved integrated yoga therapy has brought balance in hormone levels in different pathologies (Mahajan, 2014). Research studies evident that regular practice of yoga improves the thyroid gland function, which will improve in the metabolism of the body without any side effects (Krishnanunni & Ganesh, 2021; Salehi, 2019).

The present study expands the role of yoga in maintaining hormonal homeostasis for endocrine disorders, MRKH syndrome (pubertal amenorrhea), hyperthyroidism, and also the therapeutic benefits of yoga on liver disorder hypertriglyceridemia. Underdeveloped uterus and ovaries, functioning of

ovaries with low levels of estrogen, prolactin, and follicle-stimulating hormone (FSH), leads to pubertal amenorrhea (lack of menarche). In this present study-specific yogic postures like uthitaparswakonasana, Dwi padasamasuptakurmasana, prasarita pada uttanasana, pranayamasbhastrika and brahmaristimulate the pituitary gland and, hypothalamus, proper functioning of these glands balances the hormonal secretion and improve the growth of genital organs. A typical yoga program, usually consisting of Asana, Pranayama, Kriya, deep relaxation, and meditation, has a combined effect of the relaxation of body, slowing of breath, and calming of mind (Chauhan et al., 2017).

Case 1. Study on Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome

Introduction:

Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome is primarily associated with the under development of the female reproductive system. In the majority of cases, affected women do not have periods and a lack of menstruation by age 16 is the first symptom of the condition. In some cases, women with MRKH syndrome do have normal functioning ovaries and can still have children with the help of assisted reproduction. Delayed menarche is one of the major concerns in recent years related to female reproductive disorders like polycystic ovarian syndrome and dysmenorrhea. Affected females also have normal external genitalia and sexual characteristics but other defects may be present such as underdeveloped kidneys, skeletal abnormalities, and impaired hearing (Herlin et al., 2020). Gynecological problems related to the endocrine system like amenorrhea, oligomenorrhea, and the absence of periods during puberty are usually due to an underdeveloped uterus. Stress and worry, fear and anxiety, change of environment, may be the causes (Song et al., 2020). Lifestyle practices accompanied by stress result in various disorders related to female health. Especially with the current lifestyle with less physical activity and more screen time resulting in various diseases. Hormone imbalance plays a major role in MRKH syndrome (Ledig & Wieacker, 2018).

Methods:**Case History:**

The subject was a 14 years girl previously healthy, presented with overweight (80 kgs). Her ultrasonography of the abdomen shows poor penetration, the kidney shows mild calyceal dilatation, the uterus appears very small and infantile, both the ovaries were found normal in size. The subject was diagnosed with MRKH syndrome, by her gynecologist. To date of being recruited, she did not get menarche. Family history showed her mother to have menarche at age of twelve. There were no other related pathologies evident to report. The subject was not under any other treatment for the disorder.

Diagnosis and Assessment:

The case was diagnosed as primary amenorrhea type 2 (absence of periods during puberty). the present symptoms of the subject were as follows delayed menarche, overweight, fatigue, and frequent headaches. The subject was having poor control over maintaining body weight. Hormonal assessments for TSH, FSH, LH, and Prolactin were taken on baseline and post-intervention.

CT scan & Hormone profile was assessed at baseline and post-intervention table 1 and table 2.

Table 1 CT Scan Dimensions of Kidney, Uterus and Ovaries Baseline to Post Intervention

S.NO	Organs	Normal Range	Yoga Intervention		Change (%)
			Before	After	
	Right kidney	10 to 12 cm	7.56 cm	10.2 cm	34.9
	Left kidney	11.2 to 13 cm	7.36 cm	11.9 cm	61.7
	<u>Uterus</u>				
	Length	7.00 to 9.0 cm	3.18 cm	6.80 cm	113.8
	Width	4.50 to 6.0 cm	1.64 cm	3.83 cm	133.5
	Depth	2.05 to 3.5 cm	2.75 cm	2.95 cm	7.3
	<u>Ovaries</u>				
	<u>Right:</u>				
	Length	2.5 to 5.00 cm	2.99 cm	2.30 cm	-23.1
	Width	1.5 to 3.00 cm	1.51 cm	1.20 cm	-20.5
	<u>Left:</u>				
	Length	2.5 to 5.00 cm	2.94 cm	1.51 cm	-48.6
	Width	1.5 to 3.00 cm	2.3 cm	1.70 cm	-26.1

Table 2Hormone profile Baseline to Post Intervention

Sr No.	Hormone	Normal Range	Before Yoga Intervention	After Yoga Intervention	Change %
1	TSH	0.40 – 4.0 Mlu/L	2.30	3.20	39.1
2	FSH	0.30 – 10.0 Mlu/L	4.60	4.10	-10.9
3	LH	1.37 – 9.0 Mlu/L	2.92	2.40	-17.8
4	Prolactin	2 – 25 ng/ml	7.35	11.70	59.2

Table 3Yoga Intervention Protocol: (For MRKH syndrome)

Yoga intervention consists of 60 minutes daily, which will be practiced for 5days per week.

Sr. No.	Yogic Practice	Technique	Duration in Minutes
1	Loosening Exercises	Stretching and strengthening practices, Chakki chalan.	5
2	Surya-Namaskara (Sun	Containing 12 postures with breath awareness (6	5

	Salutations)	rounds)	
3	Yoga Asana	Standing Posture 1. Tadasana 2. Uttanasana 3. UthitaParsvaKonasana 4. Arda Chandrasana 5. Prasarita Pada Uttanasana	4
		Sitting Posture 1. SuptaKurmasana 2. Ustrasana 3. UpavistaKonasana 4. BaddaKonasana&SuptaBaddaKoanasana 5. Paschimottanasana	4
		Prone Posture 1. Dhanurasana 2. Sarpasana 3. AdhomukhaSwanasana 4. Sirshasana	3
		Supine Posture 1. SuptaPadangustasana 2. DwipadaVistrutaSarvangasana 3. Halasana 4. ViparitaKarani	3
4	Pranayama	Kapalabhati Pranayama	2
		Bhastrika Pranayama	2
		Seethali Pranayama	2
		Brahmari Pranayama	2
5	Bandhas	Jalandara Bandha	1
		Udyana Bandha	1
		Moola Bandha (with anthar and bahirkumbhaka)	1
6	Meditation Concentration on mooladhara and swadistana chakra	Meditation with Ashwini Mudra Sahajoli Mudra and Pankaja Mudra	15
7	Relaxation	Savasana (Amruta Tulyasana)	10

Intervention Details:

The subject was given Yogatherapy for 6 months, weekly 5 classes of daily 1-hour duration. The session was taken on a one-on-one basis. The intervention details along duration are mentioned in table 3.

Follow-up and Outcomes:

The subject underwent for yoga therapy for 6 months' duration which involves various yoga practices as mentioned. After the intervention, the subject had her menarche. The subject test reports showed a very good improvement in both structural and hormonal levels.

Baseline Test Date:

25.01.2021 Before Yoga Intervention

Yoga intervention:

started on 31.01.2021

Post Intervention Data collection:

25.09.2021 After Yoga Intervention

Discussion:

Previous studies have shown the efficacy of Yoga therapy in the management of various health disorders, this study also proves the same. There are studies showing the effect of yoga therapy on complete prescriptions for gynaecological problems related to the endocrine system (Taneja, 2014). Yoga therapy will reparation the disorder from the root. In the present case, a clear package of yogic techniques has a positive effect on the glandular level and improvement in hormone secretion. The structural changes were

observed in both Kidneys, Uterus, and ovaries post-intervention. Similarly, hormonal secretion also was influenced by yoga therapy, which supports previous studies (Rao et al., n.d.). Yoga therapy was efficient in reducing body weight and improving quality of life.

Conclusion:

An integrated approach of yoga therapy is an effective approach in treating Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome (pubertal amenorrhea endocrine disorder).

Case 2. Study on Hyperthyroidism:

Introduction:

In recent times, stress affects most persons either directly or indirectly. In modern times; stress either physical, mental, or psychological has received great attention as a causative and or exaggerating factor for many diseases like Hypertension, hyperthyroidism or hypothyroidism, Poly-cystic ovarian syndrome, etc. Hyperthyroidism is one of the commonest hormonal disorders observed in the health care system. Nearly 300 million people worldwide are affected by thyroid dysfunction as it is a common endocrine disorder (Shrestha, 2021). Poor or absent in thyroid hormones result in poor metabolism and related disorders. The thyroid hormones are responsible for the control of various bodily functions like breathing, heart rate, cholesterol levels, nervous system, body temperature, weight, etc. Any imbalance in the functioning of the thyroid gland disturbs the basal metabolic rate and affects normal bodily functions. Hyperthyroidism refers to a condition (over-active thyroid) where the thyroid gland produces an excess of thyroxine. Symptoms of Hyperthyroidism include weight loss, palpitations, and hair loss. Depending on the severity and chronicity of Hyperthyroidism the symptoms tend to vary.

Yoga, an ancient Indian system of exercise and therapy is an art of healthy life style, an integrated system for the benefit of the body, mind, and inner spirit. Regular practice of yoga can help to increase blood flow to the brain, reduce stress, have a calming effect on the nervous system, and greatly help in reducing hypertension (Chauhan et al., 2017). Yoga, a union of one's consciousness

with the cosmic, is a Holistic way of life. Yoga therapy has been shown to be efficient in the management of endocrinal disorders. Yoga therapy is a combined set of practices involving various asanas, pranayama, and meditation techniques, which acts on hypothalamic and pituitary function, helping in bringing hormonal homeostasis. The Sarvangasana increases the protein-bound iodine and rehabilitates the thyroid gland probably by increasing the microcirculation and function. The thyroid is related to Vishuddhi chakra "the psychic center" which purifies the poisons of the body (Prasanna Venkatesh & Vandhana, 2021). Long before medical science ever knew about the existence of thyroid glands, the yogis had devised practices which for good health, the neuroendocrine system was understood to be vital to higher awareness. A previous study on similar thyroid dysfunction showed a positive effect with management through yoga therapy.

Methods:

Case History:

The subject was a 17-year-old girl, diagnosed by her physician with hyperthyroidism recently. As her blood test revealed an elevated TSH level and lower than normal level of T3 & T4 levels, she has been diagnosed as having primary hyperthyroidism. She was advised to start medication for hyperthyroidism. In her family Her grandmother is also suffering from Hypothyroidism. No other family members have any other hormonal disorders. The subject preferred to undergo yoga therapy for the management of her condition and volunteered for the study. The subject's reports didn't show any structural abnormalities.

Diagnosis and Assessment:

The subject was diagnosed with primary hyperthyroidism. She presented with the symptoms of hair fall, underweight, and general fatigue. The duration of yoga intervention was 6 months. She was undergone suitable yogic counselling and was taught a series of techniques as follows table 4.

Thyroid profile was taken on baseline and post-intervention of the study as follows table 5.

Table 4 Yoga Intervention Protocol: (For Hyperthyroidism)

Yoga intervention consists of 60 minutes daily, which will be practiced for 5 days per week.

Sr. No.	Yogic Practice	Technique	Duration in Minutes
1	Loosening Exercises	Stretching and strengthening practices, ChakkiChalan.	5
2	Kriya	Vahni Sara Kriya	2
3	Surya-Namskara (Sun Salutations)	Containing 12 postures with breath awareness (6 rounds)	5
4	Yoga Asana	Standing Posture 1. ArdhaChndrasanan 2. Veera Bhdrasana 3. Prasarita Pada Uttanasana	2
		Sitting Posture 1. Suptavajrasana 2. Balasanana 3. Ustrasanan 4. Paschimottanasana 5. Poorvottanasana	4
		Prone Posture 1. Sarpasana 2. Dhanurasana	1
		Supine Posture 1. DwipadaVistrutaUttanaPadasana 2. Sethubandhasana 3. Sarvangasana 4. Halasana 5. ViparitaKarani	4
5	Pranayama	Ujjai Pranayama	2
		Sitkari Pranayama	2
		KapalaBhati Pranayama	2
6	Bandhas	Jalandhara Bandha with Antar and Bahir Kumbhaka	1
7	Meditation Concentration on Visudhi Chakra	Meditation with Maha Mudra	20
8	Relaxation	Savasana (Amruta Tulyasana)	10

Table 5 Thyroid Profile collected on Baseline to Post Intervention

Sr No.	Hormone	Normal Range	Before Yoga Intervention	After Yoga Intervention	Change %
1	Triiodothyronine (T3)	0.8 – 2.0 ng/ml	1.2	1.31	9.2
2	Thyroxine (T4)	5.0 – 12.0 ug/dl	7.70	8.10	5.2
3	Thyroid Stimulating Hormone (TSH)	0.40 – 4.0 mlu/L	8.72	3.97	-54.5

Follow-up and Outcomes:

After 6 months of intervention, the subject showed a decrease in TSH level and a minor increase in T3 and T4 levels(*table 5*). The subject became motivated through the duration of intervention, by seeing the positive effects of the practice. The associated symptoms of hyperthyroidism such as hair loss, fatigue, and body weight also showed improvement. the subject experienced a lightness of the body and freshness of mind during the intervention.

Timeline:

Baseline Data collected: 11.07.2020

Yoga intervention Started
15.07.2020

Post Data Collected
11.01.2021

Discussion:

This study helps us to understand the efficiency of yoga therapy in a short span of time was effective in managing hyperthyroidism. There are many similar studies showing how yoga therapy combined with other conventional treatments helped in the management of hyperthyroidism(Mahowald, 2019), but this study shows how yoga therapy could be administered as a stand-alone treatment in managing hyperthyroidism. There was a decrease in TSH levels and a slight increase in T3 and T4 levels which resembles the results of previous studies(Mahowald, 2019; Shrestha, 2021).

Conclusion:

This case study proves Integrated approach of yoga therapy is effective in the management of Hyperthyroidism at the hormonal level. Yoga therapy is efficient through the course of the intervention giving positive motivation for the patient in practicing with dedication.

Case 3. Study on Hypertriglyceridemia (Lipid Profile) disorder

Introduction:

Hypertriglyceridemia has indeed become a household name these days, close behind diabetes, paralysis, and heart diseases. According to one survey, 30% of Indians have high levels of triglycerides. Hypertriglyceridemia is a condition in which triglyceride levels are elevated. Triglycerides are the most common type of fat in the body and are used for giving energy between meals. Excessive Triglycerides in the blood result in many health disorders (Rao, et al., 2019). Hypertriglyceridemia is a manageable condition starting with exercise. Hypertriglyceridemia is commonly encountered lipid abnormalities frequently associated with other lipid and metabolic derangements(Shrestha, 2021). Hypertriglyceridemia has been seen as a precursor for cardiovascular disorders, multiple epidemiological studies have stated the fact that abnormal levels of triglycerides are seen in cardiovascular disorders. Excess of calories and decreased physical activity is one major cause of increased triglycerides levels. along with other hormonal abnormalities such as hypothyroidism increased triglyceride levels paves a chance for most lifestyle disorders such as diabetes, hypertension, etc. The excess sugar, calories, and alcohol, which are not needed by the body, will get converted into triglycerides and get stored in the fat cells of adipose tissue. Whenever the body requires energy, the triglycerides are released. In other pathological conditions, the person will have high levels of triglycerides when they eat excessive high-carbohydrate foods and do not use them. In such cases, hypertriglyceridemia is often considered a predictor of cardiac abnormalities.

Few scientific studies have been conducted on the efficacy of yoga therapy on Hypertriglyceridemia, all studies have shown a positive effect post yogic intervention. Yoga is suited to reduce health issues related to hypertriglyceridemia because asanas help normalize lipid levels due to high-intensity workouts. Evidence shows that a better ability to overcome stress resulting in lowered cortisol levels can be cited as a possible mechanism for improvement in lipid profile in

patients practicing yoga. The improvement in lipid profile with the practice of yoga could be due to increased hepatic lipase and lipoprotein lipase. Lipase is one of the prime functions to convert intermediate-density lipoprotein to low-density lipoprotein. This would increase the uptake of triglycerides by adipose tissue and affect lipoprotein metabolism. Previous studies have shown the efficacy of yoga therapy for Hypertriglyceridemia in other comorbid conditions, with regular practice.

Methods:

Case history:

The subject was a 47-year-old male, who was recently diagnosed with hypertriglyceridemia. The presenting case history shows that he is married, non-smoker, non-alcoholic, and following a vegetarian diet for a very long time. The subject was a health-conscious person who does yearly health checks. Doctors suggested a lipid profile test. Upon conducting the investigation, the subjects showed abnormal levels of triglycerides. The subject had an increasing level of triglycerides level 340mg/dl.

Complaints: Stomach ache, loss of appetite, feverish feeling.

Diagnosis and Assessment:

The subject was diagnosed as hypertriglyceridemia by his physician when he went with the symptoms of stomach ache and anorexia. The lipid profile was assessed on baseline and post-intervention.

An integrated approach to yoga therapy for the hypertriglyceridemia condition table 6

Hypertriglyceridemia profile was taken on baseline and post-intervention of the study. as follow table 7.

Table 6 Yoga Intervention Protocol: (For Hypertriglyceridemia)

Yoga intervention consists of 60 minutes daily, which will be practiced for 5 days per week.

Sr. No.	Yogic Practice	Technique	Duration in Minutes
1	Loosening Exercises	Stretching and strengthening practices, Chakki chalan.	5
2	Surya-Namaskara (Sun Salutations)	Containing 12 postures with breath awareness (Rapid 12 rounds)	6
4	Yoga Asana	Standing Posture 1. Tadasana 2. Natarajasana 3. Utkatasana	2
		Sitting Posture 1. Padmasana 2. Lolasanan 3. SuptaVajrasana 4. Bakasana	3
		Prone Posture 1. Dhanurasana 2. Chaturanga Dandasana	2
		Supine Posture 1. Sarvangasana 2. Halasana 3. Chakrasana	2
5	Pranayama	Surya Bhedana Pranayama	2
		Bhastrika Pranayama	2
		Shitali Pranayama	2
6	Bandhas	Udyana Bandha	2
		Moola Bandha	2

		Maha Bandha	2
8	Relaxation	Quick Relaxation Technique	3
		Yoga Nidra	25

Table 7 Hypertriglyceridemia on baseline compared to post data

Sr No.	Hormone	Normal Range	Before Yoga Intervention	After Yoga Intervention	Change %
1	Triglycerides	Normal: under 150 mg/dL Boarder line High: 151 – 200 mg/dL High: 201 – 499 mg/dL	340	88	74.1

Observation and results:

The subject underwent three months of yoga therapy intervention. Compared to baseline post-intervention, the triglyceride level declined to 88 mg/dl from 340 mg/dl as mentioned in *table 7*. A significant change in Triglyceride's level was achieved without any medication.

Discussion:

This study result proves yoga therapy could be an effective management tool for treating hypertriglyceridemia. Like previous studies, this study also shows a decrease in triglyceride levels upon yoga intervention (Negi & Joshi, 2019). In this case study, there was a tremendous drop in levels of triglycerides by yoga therapy within a short span of time, which was seen in a recent study (Ramamoorthi et al., 2019).

Conclusion:

This case study helps us understand how yoga therapy could be effective in the management of hypertriglyceridemia. The study shows that yoga therapy acts as a stand-alone treatment in treating hypertriglyceridemia.

Overall Discussion and Conclusion:

When yoga is used for pubertal amenorrhea (MRKH) to rebalance the disordered muscular and hormonal imbalances (which distort menstruation), fears and tensions are relaxed, the process will be seen in a different light. Bandhas are most effective

in releasing blockages of energy in the pelvis region. Inverted asanas are particularly recommended as they promote the drainage of waste materials from the reproductive organs and enhance pituitary blood flow. Plenty of fresh air, balanced by adequate rest and relaxation is important in stabilizing and rebalancing the menstrual flow.

Hyperthyroidism is defined as an asymptomatic state in which circulating concentrations of free T3 and T4 are normal, but serum TSH is slightly elevated. Yoga therapy focuses on stimulating the throat to improve circulation, as well as stretch and strengthen the neck where the thyroid is located. Inverted asanas stretch the body in the opposite direction. The implemented yoga asanas are also good for the brain's pituitary and pineal glands, which play a primary role as the master control gland of the entire endocrine network (Mahowald, 2019).

Yoga therapy showed a significant decrease in total cholesterol and triglyceride levels, efficiently metabolizing and excreting cholesterol from the body. HDL plays an important role in reducing cholesterol levels in the blood. After 80 days of yoga practices, positive recovery in the lipid profile may be due to elevated hepatic enzymes at the cellular level, which affects the metabolism of lipoprotein and boosts triglyceride uptake by adipose tissues (Mooventhan & Nivethitha, 2020; Ramamoorthi et al., 2019).

Conclusion:

Yoga is an accessible, less vigorous exercise that reduces stress and supports well-being. This study concludes that integrated yoga therapy (Pranayama, yoga postures and meditation) is a very effective and non-pharmacological technique for treating Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome (pubertal amenorrhea), Hyperthyroidism and Hypertriglyceridemia.

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