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Understanding the technique and effect of Kapalabhati as found in English and other European Languages

*Mrs. Oak, J. P., Dr. Sharma, B. R.,
Dr. Bhole, M. V.*



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Understanding the technique and effect of Kapalabhati as found in English and other European Languages*

*Mrs. Oak, J. P.***

*Dr. Sharma, B. R.****

*Dr. Bhole, M. V.*****

Abstract :

30 books in European languages (English 27, German 2, French 1) were scrutinized to find answers to the questions : (1) "How does the process of Kapalabhati take place ? "; (2) "What should be the proper 'dose' of Kapalabhati to get the desired results ?" Satisfactory answers in clear-cut language could not be obtained in respect of the first question.

In respect of the second question, differentiation was found to be made in the requirement of (1) the man of average health, (2) a physical culturist, and (3) a spiritual culturist.

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** Research Asstt.. Scientific Research Deptt., Kaivalyadhama, S. M, Y. M, Samiti, Lonavla--410 403 (Pune).

*** Research Officer, Philosophico -- Literary Research Deptt., Kaivalyadhama S. M. Y. M. Samiti, Lonavla -- 410 403 (Pune).

**** Joint Director of Research, Kaivalyadhama S. M. Y. M. Samiti, Lonavla-410 403 (Dist. Pune), India.

Similarly many details regarding the meaning of the term, position of the body for actual practice, precautions to be taken during the practice and desired and undesired effects of Kapalabhati technique became available from these books in comparison to books in Sanskrit language.

1.0. Introduction :

Books in various Indian languages give many more details about the technique and effect of Kapalabhati (KB) in comparison to Sanskrit (II : 1, 2). However answers to certain questions are not found. Most of the Indian writers seem to follow some kind of living tradition and the oriental line of thinking and philosophy. On the other hand, occidental mind tries to perceive the same thing in a different way. Therefore it was thought desirable to study books written in European languages with a view to understand their approach.

2.0. Material and Method :

Fifty six easily available books in English and other European languages dealing with yoga techniques were scrutinized and books describing Kapalabhati were studied in details to find answers to the questions framed during the earlier study (II - 2)

Language wise classification of these books is as follows :

English (E)-27 German (Ge)-2 French (F)-1

3.0. Observations and Comments :

3.1 The following important personalities were recognised from various books in chronological order

during the course of this study. Their writings have influenced the presentation of other authors.

1. Swami Kuvalayananda, Kaivalyadhama, Lonavla, (1930). - E1,
2. Shri Yogendra, Yoga Institute, Santacruz, Bombay (1931)
3. Swami Sivananda, Divine Life Society, Rishikesh (1949)
4. Yesudian Selvaraja (1949) - Ge 1
5. B. K. S. Iyengar, Iyengar Yoga Institute, Pune (1970)
6. Andre Van Lysebeth, Belgium (1971) - F1
7. Vishnudevananda, New York (1972) - E 9
8. Swami Satyananda Saraswati, Bihar School of Yoga Monghyr (1981) - E 10, 14.
9. Swami Rama, Himalayan International Institute of Yoga, Science and Philosophy, Philadelaphia (USA) (1981) - E 13
10. Swami Gitananda, Anand Ashram, Pondicherry (1982) - E 17.

3.2 Bhole M. V. (II : 1) Developed a lesson plan to evaluate one's understanding about the technique, practice and effect of Kapalbhathi.

3.1.2 Answers to various questions as found in these books along with comments by the authors, if any, are given below :

3.2.1 Question one : "What does the term 'Kapalabhati' Exactly mean ?

Findings :

A) 'Kapalabhati' is a compound word comprising of two words, 'Kapal' + 'Bhati'

1. 'Kapāl' is understood to mean :

- a) Skull - E1, 2, 4, 8, 9b, 17, 18, 19, 21
22, 26
- b) Forehead - E14, 20
- c) Bellows - E 7
- d) Head - F1

2. 'Bhāti' is understood to meaning :

- a) Shining - E1, 2, 4, 17, 19, 20, 26, F1
- b) Luster - E8, 17
- c) Light - E18, 20
- d) Furnace - E 21
- e) Cleaning -- F1.

B) The term Kapalabhati as a technique is understood to mean as follows :

- 1. Diaphragmatic breathing - E 9a, b
- 2. Abdominal breathing - E 9
- 3. Incessant abdominal breathing - E11
- 4. Breathing bellows - E 3
- 5. Frontal brain bellowing - E10, 14
- 6. Cleansing breath - E18, 26
- 7. Purification of head i. e. air ways in the head; nostrils and other passages of air leading to the head will also be exercised and cleansed - F1.

C) The term 'Kapalabhati' as an effect is understood to mean as follows :

1. Kapalabhati is intended to clean the nasal passages contained in the skull, along with remaining parts of the respiratory system. So the name is appropriate-E.
2. Subtle pranic currents can be felt inside the forehead and they pulsate in rhythm with the bellowing of lungs; i. e., pranic bellowing occurs in the front of the brain, so the name - E14
3. Skull or brain shining is perhaps associated with the impact made by the forcibly outgoing air in each exhalation on the sinuses of the skull and the olfactory mucous membrane - E22a.
4. An exercise that makes the skull shining in which skull means nasal passages through which air passes in and out - E1, 2, 4, 9b, 19, 22.
5. Internal cleansing of the forehead - E 5
6. Which makes the forehead and entire face lustrous - E 13

Comments :

1. The expression, 'Frontal brain bellowing' is also found in Hindi books without any explanations, while it has been explained in English (C : 2).
2. Sanskrit books have not explained the term Kapalabhati, while some of the books in English have explained it.
3. In spite of these explanations, one may not be able to get a clear idea or mental picture of 'Kapalabhati'.

3.2.2 Question Two : How does KB act as a cleansing process and as an accessory (Karana) for Pranayama?

Findings :

- a) By clearing the nasal passages, air sinuses and the entire respiratory system and activating the nerves in the forehead and the skull - E 19, 26.
- b) By cleansing the entire skull, thus removing all diseases from the head and stimulating the central nervous system - E21
- c) By removing impurities from the nasal passages and air sinuses with the forceful current of air - E 20.

Comments :

1. What is meant by impurities from the nasal passages is not made clear anywhere.

3.2.3. Question Three : "Is there any particular body position essential for the practice of KB ?"

Findings :

A) Body positions (asanas) mentioned by different authors :

1. Padmasana/Lotus : E1, 2, 4, 9a, b, 10, 16, 19, 21, 23, 24, F1.
2. Sukhasana : E5, 10, 19, 21.
3. Siddhasana : E4, 14, F1.
4. Samasana : E23.
5. Vajrasana or kneel down Japanese style : E14, 15, F1.
6. Siddhayoni asana : E10, 14.
7. Any meditative pose : E5, 10, Ge 2

8. Any comfortable/convenient posture : E1, 7, 9a, 14, 16, 20, 22, 23, Ge 1, F 1.
9. Silent sitting posture : E 11.
10. Any cross legged posture : E6, 26
11. Sitting comfortably on a chair : E 5.
12. Standing : E5, 7, Ge1, F1 (in exceptional cases)

B) Further details of the positions i. e. placing of hands, position of spine, neck, head etc. :

1. Palms are moderately pressed on knees, hands are kept straight so that vertebral column automatically becomes straight – E24
2. Hands are comfortably placed on knees. Anus and pelvis are kept in a slightly contracted condition – E 16i, O, 20, 22.
3. Sit firmly with spine, neck and head erect – E11, 26.
4. Close the eyes – E2, 4, 10, 11, 14, Ge2.
5. Relax the whole body – E10, 14.
6. Lean slightly forward – E21
7. Stand erect with the chest forward and arms passively hanging by the sides – E 5.
8. Many benefits can be achieved by sitting in an easy pose; in a straight-backed chair or even lying down in a bed or bath tub – E6
9. Spine should be straight and head should be in equilibrium–F1

C) Suitable seat for practice :

Sit erect and firm on a blanket, 'kusha' (a particular type of grass), deerskin, soft pad, cushion, towel, putting both the hands on respective knees – E2, 6, 23.

D) Arguments in favour of a particular position of the body :

1. With Footlock, the individual can withstand violent jerks and vibrations in KB - E1, 9b, 20.
2. One will never become thoroughly adept in the fast and vigorous breathing of KB until one can hold Lotus position easily. There are less chances of loosing the balance when feet are locked and body is properly balanced, then only one can remain secured- E6.
3. No standing position, as KB requires free movement of the abdomen and abdominal muscles are not fully relaxed in standing-- E1,

Comments :

1. Essential aspects like straight back, comfortable position of the body have been emphasised by most of the European authors instead of advocating any particular asana as is generally done by Indian authors.
2. Use of chair, bath tub, and lying in bed are new additions to previous observations.
3. Contradictory statements are found in respect of standing position.

3.2.4. Question Four : What are the essential and important features of the technique of 'Kapalabhati' ?

Findings :

Available information can be considered under different headings as follows :

- A) Nature of breathing
- B) Abdominal and diaphragmatic movements
- C) Movement of the chest
- D) Use of nostrils
- E) Production of sound or otherwise.

A) Nature of breathing :

1. Using yogic terms :

- a) Quick rechaka-puraka like blacksmith's bellow giving importance to lower abdomen - E4, 6.
- b) Forceful, active rechaka and passive puraka with the help of abdominal muscles and diaphragm like blacksmith's bellow - E1, 24.
- c) Vigorous and rapid rechaka and mild, slow, long '(deergha)' puraka with the help of abdominal muscles - E 2.

2. Using common terms :

- a) Active forceful exhalation in a jerky fashion and automatic inhalation like blacksmith's bellow with the help of abdominal muscles and diaphragm-E7, 11, 16, 20, 21, 22, 23, 25, Gel, F1.
- b) Sharp expulsion of air and letting go of the abdominal muscles using diaphragmatic breathing (swelling out and drawing in of the abdomen) E6, 8, 9a, 13, 14, 18.
- c) Deep and rhythmic inhalation and exhalation like a pair of bellows - E5.

- d) Rapid breathing in and out – E17.
- e) Rapid breathing in and out like a blacksmith's bellow – E3.

Comments :

1. Sanskrit texts have used the terms, 'Puraka-Rechaka' while the terms 'Inhalation-exhalation' have been used by most of the authors of the books under the present study. Thus a person reading books from both the categories may develop a feeling that 'Inhalation-Exhalation' represents 'Puraka-Rechaka'. Similar picture evolves from the study of books in Indian languages.
2. The Sanskrit texts have mentioned the sequence, 'Rechaka-Puraka' and most of the authors have also followed the same. However some authors have emphasized on, 'Inhalation-Exhalation (E3, 5, 17) and they have not explained their stand for advocating this sequence.
3. The statements given in 2b appear to be confusing and incorrect.

B) Abdominal and diaphragmatic movements :

Findings :

1. Use abdominal muscles during puraka-rechaka (inhalation-exhalation) – E1, 2, 4, 6, 7, 9a, b, 11, 13, 14, 18, 19, 23, 24, 25, 26, Ge1, Ge2.
2. Use lower abdomen during rechaka (exhalation) – E11, 22, 24. 26.

3. Use diaphragm along with movements – E1, 6, 9a, b, 11, 13, 18, 22, 24.
4. Pull (?) the diaphragm as high up as possible during the outgoing breath, like in Uddiyana bandha – E 17.

Comments :

1. The diaphragm can be pushed upwards by contracting the abdominal muscles, but how to pull it upwards does not become clear from the text and this seems to be misleading.

C) Movement of the chest :

Findings :

1. Chest should not be moved throughout the practice – E14, 16, 20, 22, 24.
2. Chest should be kept raised in an end-inspiratory condition through out the practice – E1, 5, 16, 19, F1.
3. Chest should be held in mid-inspiratory position – E25.
4. All others keep silent on this issue.

Comments –

1. Sanskrit texts do not tackle this point.
2. No unanimity is seen in respect of the position of the chest amongst various authors.

D) Use of nostrils :

Findings :

1. Use both the nostrils – E1, 7, 11, 12, 17, 22, 23, 26 (Which have to be kept open throughout – E 12)

2. Nostrils are to be kept partially closed throughout -E 12.
3. Use the same nostrils for 4 to 8 strokes and then change the nostril (Like Surya-bhedan and Chandrabhedan)- E7, 12, Ge1, F1.
4. Use alternate nostril type of breathing for inhalation-exhalation. Then change i. e. inhalation through right and exhalation through left. Such 4 to 5 strokes (like Loma-Viloma type of breathing) E4, 12, F1.

Comments :

1. E12 gives all the types saying that one can practice KB in stages by using one or both nostrils. (Iyengar B. K. S)
2. E14 specially mentions that during KB one has to breathe through the nose and not through the mouth.(Satyananda Saraswati)
3. Ge2 recommends the use of the nostril which is open at the time of the practice.

E) Production of sound or otherwise :

Wide variations were found in this respect. They have been summarized below :

1. To produce the sound like blacksmith's below during rechaka - E7, 19, 23.
2. To produce blowing sound - E24
3. To have noisy rechaka - E1
4. To produce hissing sound during rechaka - E26.

5. To produce low sound due to air friction - E22.

Comments :

1. Only 7 authors speak about production of sound; others are silent on this point.
2. No author has indicated the area from where the sound is expected to be produced e. g. glottis, nostrils, or any other area.

3.2.5. Question Five : What information is available about the actual practice of Kapalabhati ?

Findings :

1. Repeat KB (i. e, strokes) for several times. Begin with 7 to 20 cycles (strokes) depending on one's capacity - E13.
2. Repeat KB strokes for 60 times like a metronome giving each exhalation one count - E15.
3. Beginner - 20 rapid respirations in each round. Increase 5 to 10 respirations per week as per capacity upto 60 to 100 respirations in one round and such 2 to 3 rounds. Average man should not have more than 10 to 20 rounds however, it is possible for a person with strong and purified (?) body to practice hundreds of rounds lasting for hours) - E14.
4. Begin with 20 expulsions, gradually add 20 expulsions per week and reach upto 60 expulsions in one round.
After 1st week -- 2nd round may be added.
After 3rd week -- 3rd round may be added.

After 2-3 week's practice one should go in for increasing the rate of strokes per minute i. e. from 60 expulsions per minute to 120 expulsions per minute -- E11.

5. Start with one expulsion per second. Gradually increase upto 2 expulsions per second by adding 10 expulsions each time and reach upto 120 expulsions in one round.

1st week - 10 expulsions = One round in morning

2nd week - -do- = One round in morning and evening

3rd week - -do- = Two rounds in morning and evening - E2.

6. Begin with 11 expulsions in one round, such 3 rounds in one sitting and such 2 sittings in a day.

Add 11 expulsions to each round every week till each round consist of 121 expulsions. In between two rounds, one can have normal breathing for one and half min. as per one's requirement. Start with one expulsion per second and develop upto two expulsion per second. This is fairly good speed for a man of average health. Person having above average health can practice upto 200 expulsions in one minute. E1.

Physical Culturist can have double the average dose. Either double the number of rounds keeping the number of expulsions in each round constant or double the number of expulsions in one round keeping the number of rounds constant.

Spiritual Culturists— 3 rounds of 3 minutes each at one time. Gradually the number of rounds should be reduced to one round only — E1.

Comments :

1. Most of the books give instructions about the number and speed of strokes and number of rounds to be performed in one sitting etc. This information is not found in Sanskrit texts.
2. These authors seem to speak about the 'dose' of Kapalabhati for different types of individuals like a person of average health, person of above average health, physical culturist, and spiritual culturist --E1, 14.
3. Most of the authors seem to agree on the point that one should begin KB with one exhalation (stroke) per second and gradually increase up to two strokes per second.
4. E--1 has given detailed instructions in respect of 'how to increase ones practice of KB' so that there is no chance of having any injury to the system.

3.2.6. Question Six : 'Is Kapalabhati viewed as something more than a cleansing process ?'

Findings :

Like books in other Indian languages, 7 books in English, 2 in German, 1 in French, have also viewed Kapalabhati as a pranayama even though traditional Sanskrit texts describe it as a cleansing process only. Their statements and nature of instructions in this respect are summerized below :

A) Kapalabhati as Pranayama or similar to Pranayama in effect.

1. The term 'Kapalabhati pranayama' has been used by-E8, 10, 12, 14, 17, Ge1, 2, F1.
2. KB Pranayama is similar to Bhastrika Pranayama - E7, 8.
4. KB is a variety of Pranayama having diaphragmatic breathing - E9a.
5. KB Pranayama is considered one of the eight classical pranayama and very much like Nasagra Bhastrika, but the breath is flung upwards as in Uddiyana Bandha-E17.

B) Nature of instructions for practising Kapalabhati as a Pranayama :

1. KB as Pranayama without Kumbhaka
 - a) Perform Purak and Rechak rapidly and vigorously where rechak plays a prominent part. Purak is mild, slow and long (dheerga). - E2.
 - b) Air is rapidly breathed in and out through the nostrils with a distinct impression that during inspiration,

prana flows in along the floor of the brain and during expiration, Apana or magnetic flow is being flung back upward through the spine and thus energy is getting circulated inside the body. Diaphragm should be pulled in as high as possible like in Uddiyana Bandha. Begin with 30 slow in and out breaths, increase one or two out breaths each day, reach upto 120 at one sitting. There is no point going beyond. - E 17.

2. KB as a Pranayama with bahya kumbhaka.
 - a) Practice retention of breath for a split second after each vigorous exhalation-
-E7, 8, Ge 2.
 - b) Practice 60 to 100 times gentle exhalation followed by spontaneous, effortless inhalation. At the end, retain the breath after exhalation with 3 bandhas. Meditate on the void in front of closed eyes in the region of the eyebrow centre feeling emptiness and calmness. Release the bandhas and inhale slowly. This is one round of pranayama - E10.
 - c) After comfortable number of rapid respirations, perform one deep and slow inhalation and complete exhalation till you feel the lungs emptied. Apply Mahabandha i. e. Mulabandha, Uddiyana bandha, and Jalandharabandha together and hold the breath as long as it is comfortable. Release Maha-

bandha and slowly inhale. This is one round. Practice three rounds - E 14.

3. KB as a Pranayama with Bahya Kumbhaka and Antar Kumbhaka. Practice 60 KB strokes. Exhale completely and perform Bahya Kumbhaka by closing the nostrils for 10-15-20 or more seconds according to capacity. After completing desired number of rounds of bahya kumbhaka, one may continue with Antar Kumbhaka - E 22b.

Comments :

1. Out of 30 authors, 10 authors mention that KB is a Pranayama.
2. E 17 mentions about Prana and Apana energy and their pathways inside the body. This is a new aspect of the practice which is not found in the books studied in the past. (Swami Gitananda)
3. E22 b advise the practice of internal Kumbhaka after completing desired number of rounds of bahya kumbhaka but does not write more details. (Joshi K. S.)
4. E 17 mentions apana as a magnetic energy, but does not explain the nature of pranic energy.

3.2.7. Question Seven : What are the useful hints and precautions for the practice of KB ?

Findings ?

A) As a preparation for KB ?

1. Start KB only after practising alternate nostril breathing for one or two months--E 9b.

2. Start KB practice when the diaphragm takes the natural movement - E 9b.
3. Practice Jala neti with antiseptic solution before KB to minimize the risk of spreading infection in case of nasal ailments -- E 5.
4. One should concentrate in the nose and confirm that the nasal channels are free - Ge 1.
5. Blowing the candle vigorously and simultaneously, observing inward movement of the abdomen -E 15.
6. One should have mastery over Jalandhara, Uddiyana and Moola bandhas, before attempting KB - E 10.

B) For actual practice of KB :

1. First learn the technique correctly, before increasing the speed and time of KB. The breathing should be rhythmical and fast-E6, 19, 22, 24.
2. The exhalation and inward stroke of the abdomen and the relaxation of the abdomen and inhalation are to be synchronized properly - E 24.
3. No undue strain should be there on the system at any stage during KB - E1, 5, 8, 9, 14, 19, 24. If you are in a normal condition there is no danger of strain -E 19.
4. Force of expulsion, speed, number of expulsions in one round, number of such rounds in one sitting are to be adjusted according to one's capacity and need. Number of expulsions should be increased gradually - E 1, 9 b, 24.

5. Friction of air with any delicate parts of the mucous membrane of the nasal passage is to be cautiously avoided - E 1.
6. Have sufficient rest in between two rounds -E 1.
- 7 a. Spiritual culturist should concentrate on a centre in the lower abdomen in which spiritual energy is stored-up and physical culturist should concentrate on expulsions with realization of elimination of large quantities of CO₂ and absorbing O₂ in the system - E 1.
- b. Concentrate on solar plexis in the navel region - E, 9a, b.
- 8a. More attention should be focused on exhalation rather than inhalation - E9.
- b. Fix attention at 'chidakasha' (the dark space you see in front of your eyes). Feel the pranic current within the chidakasha induced by bellowing of the lungs and whole area of frontal brain is being purified -E 14.
- c. Attention is to be on the diaphragm rather than the intracostal muscles - E11.
9. Remain composed while exhalation-E 2, 3.
10. After a few rounds of KB one should feel a natural churning sensation in the brain - E17.
- 11a. Practice KB before learning some higher breathing exercises such as Bhastrika Prana-yama - E 9a.

- b. Practice KB before meditative techniques-
E - 14.
- 12. Do Mukha Bhastrika, the cleansing breath following this KB, then recline forward in Dharmikasana or stretch out and relax in Shavasana for 2-3 minutes before any other Pranayama or returning to your daily activities -- E17.
- 13. Only the out breath is not important but the major part of the skull cleansing is concerned with a proper regulation and visualization of incoming breath -- E 17.
- 14. Not to go beyond 120 in and out breaths in each 'prana-gharshana' -- E 17.
- 15. Flow of air should not be obstructed by contracting throat or nose -- E 22a.
- 16 a. Exhalation should be sudden and take about 1/5 of the time of inhalation -- E 6.
- b. Exhalation should take about 1/4 time of the inhalation - E 9b.
- c. Exhalation should take 1/3 of the time of inhalation - F1.
- 17. After 6 to 8 Kumbhakas of any kind, practice one round of KB which act like a safety valve and will eliminate accumulated CO₂ which is main cause of uneasiness in pranayama practice - E 22a.
- 18. Not to practice KB too fast and with excessive pressure - E 3.
- 19. Not to practice KB for awakening of Kundalini - E 12.

20. KB should be practised along with other yoga breathing to get full benefits of it as yoga exercises and breathing are complementary -E6.

21. Vigorously breathe out through the lips by concentrating on exhalation - E 15.

c) Making errors during the practice of KB
Andre Van Lysebeth (F1) has given the following information :

1. Allowing the participation of thorax in KB.
2. Pulling up of the shoulders
3. Balancing the time of Inspiration and Expiration ($I=E$)
4. Retract the abdomen more after finishing the stroke
5. Not keeping the spine straight and immobile
6. Practising KB without awareness
7. Sacrificing the force of expulsion to benefit the speed in KB.

Comment :

This is new information which is not available in the books studied earlier.

3.2.8. Question Eight : When the practice of KB should be stopped or reduced ?

Findings :

1. One should stop or reduce the practice of KB if one experiences:

- diminision of sound – E 12
- bleeding of the nose – E8, 12
- throbbing or aching of the ears – E8, 12
- irritation or strain – E 12
- little dizziness, giddiness and fainting–E 14, 17, 19, 21
- loaded stomach – E 20
- fatigue – E 5, 14
- shortness of breath or hyperventilation–E5, 14, 17,
- discomfort – E 10, 14
- any adverse effect – E6.

2. If above listed symptoms recurr again after restarting the practice, then stop the practice forever– E 12.

Comments :

By following these instructions one can avoid further strain or injury to various system.

3.2.9. Question Nine : Under which conditions one should take medical advice and proper guidance for starting, stopping or continuing the practice of KB ?

Findings :

If one has

- any serious trouble of heart or lung – E1
- weak heart and palpitations – E 6
- pulmonary and cardiac disorder – E1

Comments :

1. Sanskrit texts do not give such instructions
2. Taking medical advice before starting KB may found to be useful to avoide further complications.

3.2.10 Question Ten : Under which conditions and for whom practice of KB is contraindicated ?

Findings :

1. Practice of KB is contraindicated if one has :

- a) weak constitution and poor lung capacity - E 8, 12.
- b) high or low blood pressure - E 8, 14, 18, 19, 21, 23
- c) bad breath - E 14.

2. If one has following diseases :

- a) Pus in ear, detachment of retina or glaucoma - E 8, 21
- b) Ulcer or liver diseases - E 23
- c) Gas in abdomen - E 23
- d) Vertigo - E 14
- e) Diabetes - E 23
- f) Hernia - E 14

3. Under following conditions :

- a) travelling - E 14
- b) rains - E 14
- c) late in night - E 14.

4. For women - E 12,

Comments :

- 1. Sanskrit texts do not mention about any contraindications for KB.
- 2. E-14 says that if KB has been done late in the night one cannot get sleep (due to stimulation ?)

3.2.11 Question Eleven : What is the expected out-come or effects of the practice of KB technique and when one can expect to get them ?

Findings :

Effect of KB can be considered under the following heads :

- A. of yogic importance
- B. of physiological importance
- C. of psychological importance
- D. of therapeutical importance
- E. of general importance

A. Of Yogic Importance :

1. Helps in awakening kundalini if practised for maximum duration - E 6, 11, 24
2. Spiritual culturist takes advantage of KB for his higher development, for nerve culture, awakening particular nerve centres of spiritual significance - E1, 2.
3. Purifies frontal region of the brain and helps to develop voidness and emptiness of the mind -- E 10
4. The capacity for concentration is heightened - E 7.
5. Stimulates every tissue in the body. Creates vibrations. Joy can be felt especially in the spinal cord. Vital nerve current is stimulated -E 9.
6. Clears frontal lobe of the brain by speeding up the bloodflow. At a subtle level it stimulates pranic flow in the same region - E 14.

7. Stimulating and awakening brain centres - E 14.
8. Cleanses central artery of the subtle body - E 3.
9. Helps in holding the breath for longer duration and making the kumbhaka comfortable - E 11, 22, 24,
10. Controls and cleanses the 'Panchabhutas' - the five great elements -- E 17.
11. Clears away the cobwebs of doubt to prepare for higher mind-brain activity - E 17.
12. Clears away many brain disorders and is an essential pranayama for anyone approaching Adhyatmika concentration and meditation - E 17.
13. Generates pranic vitality - E 18.
14. Good preparatory technique for meditation - E 10, 14.
15. Cleanses the mind - E 17.

B. Of Physiological Importance :

1. Nerve and muscles are toned up - E 18, 24.
2. Stimulates, strengthens, tones up the liver, spleen and pancreas, abdominal muscles and gives massage to the abdominal organs (viscera) - E 12, 18, 24.
3. Improves digestion and facilitates evacuation - E 1, 12, 13, 14, 18, 19, 23.
4. Helps in O₂ consumption and more CO₂ elimination - E 1, 2, 9b, 14, 22a, 24.
5. Quietens the respiratory centre - E 1, 11, 24.

6. Makes respiratory rhythm constant - E23.
7. Cleanses nasal passages and respiratory tract and keeps it free from impurities and mucous etc. - E 2, 5, 9, 16, 18, 19, 20, Ge1.
8. Increases efficiency of respiratory system - E 20.
9. Toning up of respiratory and circulatory system - E2, 27.
10. With practice stomach muscles and diaphragm will become stronger and more elastic and will give a powerful drive to the exhaling kick - E4.
11. Increases ventilation and lung capacity- E1, 2, 3, 4.
12. Strengthens thoracic diaphragm-E 16, 26.
13. Blood circulation of extremities is decreased and that of pelvic region is increased-E 24.
14. Affects nerve centres in the navel region and nerve roots in the skull - E24.
15. Stimulates central nervous system - E2 1.
16. Makes the whole body more flexible-Ge. 1
17. Stimulates and revitalizes nerves of the solar plexus - E 7.
18. Person feels more powerful-Ge 1.
19. KB induces a reversal in the flow of nerve impulses to and from the brain, bringing about stimulation and awakening of the brain centres due to active exhalation and passive inhalation - E 14.

C. Of Psychological Importance :

1. Creates a feeling of exhilaration and freshness – E 12, 18, 19, 24.
2. Helps in stopping thoughts and visions – E 10, 24.
3. Energized the mind and removes tiredness if you have a lot of mental work – E 14.
4. Induces tranquil and receptive state of mind – E 22.
5. Improves memory retention – E 17.
6. Revitalizes body and mind, keeping one youthful and radiant – E 19.
7. Gets more ability in concentration – Ge 1.

D. Of Therapeutical Importance :

1. Removes
 - a) rhinitis, coryza, sinusitis, nasal catarrh and cold, bronchitis and emphysema – E2, 4, 5, 7, 9, 12, 13, 14, 15, 18, 20, 23, 24.
 - b) Phlegm and related disorders – E2, 18.
 - c) All diseases of head – E 21.
2. Controls
 - a) Asthma, bronchial spasm and other disorders – E2, 4, 9a, b, 23,
 - b) Cerebral thrombosis – E 10.
3. Keeps away
 - a) Tuberculosis – E2, 4.
 - b) Senility – E 6.
4. Cures
 - a) constipation – E2, 4, 9, 23.
 - b) consumption – E 2, 4,
 - c) lymph deficiencies – E 3

- d) bad breath, cultivation of pus bacteria in frontal air sinuses – E 5.
- e) bad and dangerous habit of mouth breathing – E 7.
- 5. Maintains Proper health and functioning of the heart – E 2.
- 6. Useful when lungs are full of mucus and when stomach and nose cannot be washed with cloth (i. e. Vastradhauti) – E3.

Comments :

- 1. Some of the claims made by various authors seem to have no rational foundations nor any clinical or experimental evidence. Sometimes, in actual practice, there is a possibility of getting contrary results if proper precautions are not followed by the practitioners.
- 2. Conditions like bad breath have been contra-indicated for the practice of KB by one author (E 14) while other author (E5) claims that KB is a therapeutic prescription for the same. Such type of contradictory statements can be found else where also.

4.0. Discussion and Conclusions :

- A) Most of the observations made during this study were similar to those made in the earlier study while studying books in Indian languages other than Sanskrit.
- B) Swami Kuvalayananda was the first person to publish the technique of KB with many details

in Yoga Mimamsa in 1930. Subsequently, directly or indirectly, many authors seem to have been definitely influence by the style of his writing.

C) Additional observations are as follows :

- 1) Six authors have given the reference of Hathapradipika (E1, 3, 5, 14, 23, 24) and and three authors have quoted Gheranda samhita (E5, 14, F1, as their source book).
- 2) What is meant by impurities is not made clear by any author.
- 3) Standing position and even use of chair, tub-bath and lying in bed have been recommended by some authors for the practice of KB.
- 4) Three authors (E 3, 5, 17) have used the sequence of Inhalation – Exhalation without giving any explanation when the original sequence is that of Rechaka–Puraka.
- 5) Pulling up of the diaphragm mentioned by E17 cannot be understood properly.
- 6) Four authors have given (E1, 2, 11, 14) detailed descriptions in respect of starting the practice of KB and developing its practice gradually for physical and spiritual culture.

D) Some of the new aspects described or mentioned by various authors could be summerised as follows :

- i) E 17 has referred to 'Pranic and apanic energies' and also 'Pranagharshan' during the practice of KB.

- ii) Andre Van Lysebeth (F1) has referred to the possible nature of errors that could be committed during the practice of KB.
- iii) E 14 has mentioned about fixing the attention at 'Chidakash' and to feel the pranic currents within this space.

E) In spite of various details available to us in respect of the technique and effect of KB., one fails to understand how the process of KB i. e., shining of the skull takes place. This gap in our knowledge and understanding forces us to take a help of living masters and traditions. It is intended to work on these lines in future.

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