Lesson 21

"A great saint, a mahatma, a yogi, a prophet or ajnani lives on this earth like any other human being. He thinks, enjoys and eats like others. The great difference between a yogi and an ordinary man is that he has awakened a dormant faculty in man called awareness. He has unfolded this faculty, whereas the ordinary man has not. He is always aware. He is called a drashta - a seer. He is the witnesser of events. Your aim on the path to realizing and awakening your dormant potential should be to gradually unfold this faculty of awareness within yourself. You should try to become a seer."

Swami Satyananda Saraswati

Topic 4

The Brain

In this lesson we have introduced sirshasana - the headstand pose[1]. This asana has favourable and profound effects on the whole body; however, these effects are most notable on the brain. This topic has been included so that you will more easily understand and appreciate how sirshasana can help to improve the functioning of the brain, and in turn the health of the entire body.

Introduction

The brain is the gateway between the mind and the physical body. Specifically, it can be considered as part of the physical body, but not part of the mind. Many people confuse the brain with the mind, though they are totally different entities. The brain is the switchboard between the more subtle realms of being and the physical body. It is the crossroads between the inner and outer world. It is the junction of individuality. Without it, each person would be totally helpless, unable to communicate with and act in the external environment. It is the controlling instrument or computer that allows each person to express himself in the world, to translate thoughts into actions. Without the brain you would be unable to talk, walk, sit, eat, read and a multitude of other activities that we take so much for granted and never think twice about. All these actions depend on the functioning of the brain. The better its condition the better we are able to act and express ourselves in life.

Inefficiency of the brain immediately implies reduction in our ability to remember, to concentrate, to intellectualize and so forth. Memory, concentration, the intellect and other similar abilities are mental functions, but you are unable to utilize them fully if the brain is not working properly. It is through the brain that thought is expressed. It is through the medium of the brain that our mental concentration can be utilized. It is through the instrumentality of the brain that the mental faculty of intellect can be expressed. So we emphasize the obvious: the brain is a very important organ. It is the means by which the mind expresses itself.

The brain is also the master coordinator of the millions of functions, large and small, that are continuously occurring in the physical body, from the growth of an individual hair on the top of your head to the heartbeat rhythm; from the reactions to the sensation of a mosquito bite to the digestion of food; from the power of speech to the action of the white blood cells in healing wounds. The brain never rests. Like the heart and lungs it works day and night. It is constantly on vigil; if this were not the case then the body would suffer irreparable damage. The brain is a biochemical computer of far greater complexity than the most sophisticated digital computer produced by modern science, and it is packed away in a small space.

Just think about this idea for one minute - you are earning a computer on your shoulders that is unimaginably more intricate than anything described in the wildest flights of fancy of even the most visionary fiction writer. The brain is so complex that modern neurologists feel totally overwhelmed; they feel the same awe as modem astronomers who look into space and realize how little they know about the outside universe; they feel like the man who tries to empty the water from the sea with a small cup. Such is the incredible nature and complexity of the brain, and each of us has one of these instruments. Few people, sad to say, use it very constructively. This organ is the instrument through which we can express the vast untapped knowledge of the mind. Yet few people ever use their brain efficiently in this way. Instead, the brain is treated in the same manner as a child would play with the latest electronic computing equipment. The potential that each person has in the mind is rarely expressed in the outside world.

Let us give a few awe inspiring facts. It is said that each square millimetre of the brain contains about fifty thousand nerve cells (neurons). This may not sound much, but it means that the entire human brain is composed of an estimated ten to thirteen thousand million neurons. Each of these neurons is connected directly to thousands of other neurons. The number of interconnections that result from this is enough to stagger even a mathematician or an astronomer, who is accustomed to large numbers.

Messages between neurons in the brain and nerve cells throughout the whole body, are transmitted both electrically and chemically. Neurons have bulbous endings (called synapses) which secrete chemicals that cross the microscopic gaps between individual cells and cause neighbouring cells to release their own chemicals in response. This process allows the transmission of current from one cell to another. The speed at which these cells can carry out their chemical transactions is amazing. Some of these chemical reactions occur in as little as one millionth of a second. As many as one hundred thousand neurons may be involved in transmitting simple data from the senses to the brain. Consider an example of a pin stuck in the thumb; this results in pain, followed by a yell and a rapid removal of the pin. The whole process occurs in less than one second. Numerous similar processes are occurring within the brain at this very moment.

The brain continuously functions throughout all its parts. This means that millions of neurons are in a state of excitability at any one moment. It is no wonder that the brain requires a vast amount of energy. The transportation of this energy to the brain depends on an efficient blood supply. Sirshasana greatly improves this blood supply. It is therefore no surprise to discover that sirshasana has been found to significantly improve its efficiency.

The brain is a constantly changing pattern of nerve impulses that performs millions of computations simultaneously. It is said that it constantly receives and analyzes approximately two million visual input data (through the two million nerve connections to the eyes) and about one hundred thousand sound inputs (from the one hundred thousand nerve connections to the ears). Besides this, the brain is continuously receiving and processing millions of nerve impulses from other parts of the body. All this is happening in your head.

The **brain and** the **mind**

You may be wondering why we have so positively differentiated the brain and the mind. The answer is simple and obvious, namely that they are different entities. However, you should not accept our word for this, but find out for yourself through the practice of yoga. Modern science is already starting to indicate this distinction and the following are a few examples of the discoveries of modern neuroscience that show this.

Neurological investigations have found that the brain does not store memories in the same manner as a modern digital computer, where each bit of information is in a specific cell (pigeon hole). If one half of the brain is removed or put out of action, then the memory is not erased. The ability of the individual to recall a memory is impaired, but the actual memory remains intact. This may at first seem mystifying, but the answer is simple if one regards the phenomena from a yogic point of view. The memory is in the mind, and the more subtle mind is not directly influenced by the impairment of the brain apart from the fact that the mind cannot utilize the full capacity of the brain instrument. Therefore, interference with the brain does not necessarily affect the mind and memory. The brain is the means for the individual to express mental memories; it is a more gross instrument. The brain is a switching mechanism. Science is starting to discover facts that indicate the difference between the brain and the mind, but they have yet to make a positive statement. At present the words 'brain' and 'mind' are used almost synonymously; yet soon neurological investigations will prove that the mind is a more subtle instrument than the brain. One researcher has said that the explorers of the brain may discover a new world. Possibly he was not aware of the implications and truth behind his statement, that the new world beyond the brain is the mind.

Neuroscience has also made other interesting discoveries that have caused much perplexity since they don't fit into existing theories of the brain. For example, medical scientists have not yet found an anatomical brain centre concerned specifically with learn-

tng and knowledge. Researchers cannot find any explanation for learning and this seems startling for it is this faculty of learning that is one of the distinctive features of man. Yet they are totally puzzled about the actual location of this learning process. One eminent neurologist has said: "There is no scientific basis for learning... it cannot take place ... yet it does."

This is the point, the dilemma that modern science has reached. It knows, like everyone else, that the learning process takes place, but cannot find any part of the brain that is directly concerned with learning. How can this be? From a yogic point of view the answer is very simple: the process of learning takes place in the mind which is beyond the brain. To find the process of learning, neuroscientists will have to start practising meditational techniques. Then they will realize where the centres of learning and memory are located.

Neurologists are baffled by their investigations into the brain. In one magazine, a researcher writes: "... the brain thinks about itself as it thinks about itself thinking about itself." This seems to be a riddle and it is, if one tries to understand mental processes by investigating only the brain organ. The riddle ceases to be a riddle when one considers the functioning of the more subtle instrument - the mind and consciousness.

Basic anatomy of the brain

A volume could easily be written on the different parts and functions of the brain. In fact, in our library we have a book on human neuroanatomy which amounts to nearly one thousand pages of solid facts and figures about the brain. Here we are only interested in briefly describing the basic functions so that you can appreciate the importance of perfect functional efficiency of the brain. If you are interested in studying the subject further then you should read a suitable textbook.

The brain can be very roughly divided into three sections: the lower, middle and upper. At the lowest level are the activities which govern the blood pressure, the depth and rate of breathing, the body temperature, the digestive process and so forth. There are also many automatic or reflex centres in the spinal cord which cany out many body functions that have no need to be controlled from the brain itself.

The midbrain acts like an intricate switchboard. It receives impulses from every part of the body, sorts them out and transmits relevant impulses to the higher brain centres. It acts like a sluice gate that prevents unnecessary information going to the higher centres. It is the guardian of the gate, which only allows certain data to pass through. It thereby prevents the upper brain being overwhelmed by irrelevant information.

The upper or higher section of the brain is called the *cerebral cortex.* It is this part of the brain that structurally distinguishes man from animals. Fish and birds have little or no cerebral tissue; chimpanzees have the largest cerebral cortex of all animals; while man has easily the largest of all earthbound creatures.

The cerebral cortex fills the dome of the head and is divided down the middle; each half is automatically separated from the other. Each half is cross connected with nerves so that one side controls the other side of the body - the left side of the cerebral cortex controlling the right side of the body, and the right side of the cortex controlling the left side of the body. In most people the functions of the left hemisphere of the cortex are dominant; it is associated with speech, hearing and analytical undertakings such as mathematical problem solving. The right hemisphere is primarily concerned with spatial perception, synthesis of ideas and appreciation of art and music. The two hemispheres are connected together through a bundle of nerve fibres called the *corpus callasum.*

The cerebral cortex includes the centres that receive incoming data from the body via the midbrain and interpret them in a sensible manner. These centres decipher all external data coming from the surroundings through the sense organs of the eyes, ears, etc. All incoming information is interpreted by comparison with previous memories and from this suitable conclusions are reached. Appropriate actions are then instigated and carried out by the body. The cells and centres of the cerebral cortex act as receivers and transmitters of thought. They are the junction at which the mind-brain liaison takes place.

The brain is composed of two main types of tissue; one is called grey matter and the other white matter. The grey matter consists of nerve cells and the white matter of nerve fibres

(lengths of nerve cells joined together). Unlike most other types of cells within the body, nerve cells do not regenerate or reproduce themselves. It is believed that each person is born with a full complement of these nerve cells to last the entire lifetime. They grow during childhood, but they do not multiply. If the cells die then the fibres will also die and vice versa. The nerve fibres connect the different cells together within the brain and also connect the brain to all parts of the body. They may be as long as fifty centimetres in length. It has been estimated that there are about two hundred million incoming and outgoing fibres linking the brain with the rest of the body.

The following is a brief description of the major functional areas of the brain.

The *cerebellum* is a fist-sized region located at the rear and lower part of the brain behind the top of the spine. It is concerned with maintaining muscular tone throughout the whole body. It supplies a continuous stream of nerve impulses to the motor nerves and thereby keeps the muscles in the appropriate state of partial contraction. The cerebellum also coordinates the movements of the muscles and harmonizes complex muscular actions. The entire process occurs automatically.

The *thalamus* is located at the top of the spine in the middle of the brain. It is the relay or transmitting station that sends information to the higher centres of the brain, having sorted out unwanted data. It is also the region where so-called protopathic sensations reach the threshold of conscious perception. The protopathic sensations are the instinctive signals which indicate pain, pleasure, etc. in different parts of the body without any discrimination regarding their importance, meaning, etc. Other more sensitive sensations are called epicritic; these are consciously perceived in the cerebral cortex, having passed through the thalamus.

The *hypothalamus* at the top of the spine is connected directly to the thalamus; it is part of the limbic system and is concerned with our emotional states and reactions. It is the centre that makes the emotional response of happiness, unhappiness, anger, etc. It is often inhibited by the higher brain centres, so that one suppresses emotional reactions. The reward (pleasure) and punishment (pain) areas of the brain are also located within the hypothalamus. It is interesting to note that the pleasure centre is appreciably larger than the pain centre. The hypothalamus is also the central control centre of the sympathetic and parasympathetic nervous outflows. These two systems are associated with control and activation of all the organs of the body, from the heart to the eyes, from the skin to respiration.

The hypothalamus also contains the centre of wakefulness, consisting of sympathetic nerves, and the centre of sleep, consisting of parasympathetic nerves. The hypothalamus is therefore a very important part of the brain.

Other parts of the brain include the *fissure of Roland, parietal lobe* and the *occipital lobe,* where most of the functions concerned with skin sensations such as touch, temperature and pressure, hearing, seeing, eye movements, sense of smell and taste, speech and so forth are received and interpreted.

The most well-known area of the brain is called the *frontal lobe,* located behind the forehead. It is this centre that most clearly differentiates man from animals. It is this area that is concerned with human traits such as truth, honesty, morality, justice, discretion, friendship and many other characteristic human attributes. This is the so-called silent area of the brain which determines the nature of an individual. Any injury or malfunction of this area can cause the individual to become careless, mentally deranged, depressed, anxious, or lose all sense of values. It is the centre of personality. It is also believed to be the instrument or centre which picks up the memory of the mind; this is demonstrated by the fact that electrical or nervous stimulation of this area brings about recall of past experiences, good and bad. This part of the brain acts as the switchboard of the mind.

Nervous system

The nervous system is an extension of the brain, though the brain can also be considered to be part of the nervous system - it is a matter of definition. The brain communicates with the rest of the body through the nerves of the spine and a multitude of others outside the spine. The brain is like the telephone exchange and the nerves are like the thousands of telephone lines that connect the telephone exchange to individual telephones. Innumer-

able messages pass to and from the brain, bringing all organs, muscles and all parts of the body into direct communication with the "brain. Most of these messages occur below the level of conscious perception.

There are two main groups of nerves. One group is the sensory nerves which transmit information to the brain concerning the state and happenings in the outside environment and about the physical condition of the body, such as temperature, pain, etc. Each type of sensory perception requires a special receptor. The sensations connected with pain, pleasure and touch of objects depend on specific sensors; these cannot detect other sensations. There are thousands of these different sensors throughout the whole body. Nerve impulses from these detectors travel to the brain along specific nerve pathways; from there they are redirected to the particular brain centre connected with that type of sense. They are then interpreted according to previous experience.

The second group of nerves are called motor nerves. These come into play if action is required in response to the interpretation of nerve impulses from the sensory nerves. The motor nerves carry explicit commands from the brain to the muscles telling them to move in a certain manner. Let us give an example. You are reading a book. Your eyes are attracted to something interesting. Sensory information is transmitted to the brain. The brain responds by sending a series of messages to the muscles of the fingers, hands and arms, directing them to turn the pages of the book for more information. The sensory and motor nerves act as a continuous feedback system.

This same feedback operates with the nerves of taste and smell located in the mouth and nose. If we taste some food, we immediately know whether we like it or not. The taste buds on the tongue are sensory receptors that immediately flash a message to the brain; from this we know whether to continue eating or not. The pleasant odour of a well-cooked meal acts in the same way. Both of these sensations not only allow one to enjoy food, they also cause the digestive organs to prepare for the process of digestion.

It is the nervous system that allows the brain to receive information from the eyes. Within each eve there are millions of small receptors that are sensitive to light; they detect all the different colours. When the eyes look at something, then a picture or image is formed on these sensors in the screen (retina) at the back of the eye. These sensors transmit messages to the brain where they are interpreted. In this way, one understands the nature of the object.

It is the same with the ears; they contain thousands of tiny sensory nerves that are sensitive to differences of pitch, tone and quality of sound. All the different sounds that occur at any one moment are transmitted to the brain, where they are interpreted and recognized as being a sound that has been heard before. If it is a pleasant sound such as beautiful music, it will produce a joyful emotional response. Without the brain we would never be able to recognize any sounds.

A most important section of the nervous system is the autonomic nervous system, comprising the sympathetic and parasympathetic nerves. They are essential for maintaining perfect balance and harmony in the functioning of all physical organs-.

It should be abundantly clear that without the brain and the nervous system, we would be totally unable to experience the outside world; also the functioning of the inner organs would not be synchronized so that they work together for the overall health and well-being of the entire body. The degree to which we can live to the full depends on the efficiency of the brain. Various yogic practices, especially sirshasana, help the brain to function as a perfect instrument.

Endocrinal system

The endocrinal glands supplement the nervous system, in particular the sympathetic and parasympathetic nerves. Together, they make up a single neuroendocrine system that integrates and coordinates the metabolic activities of the body, and controls the ability of the body to face changes in the internal and external conditions. The two systems work hand in hand. However, the important difference between them is that the nervous reactions are quick and short lived, whereas endocrinal responses are slow and protracted to give permanent changes to the body. That is, the nervous system produces speedy changes in the body, while the endocrinal system gives continuity to these changes.

The glands are distributed throughout the body and secrete specific chemicals called hormones into the bloodstream. In this way, the hormones are distributed to all parts of the body. These trigger definite organs that react to specific hormones. In this manner changes are induced within the body according to the dictates of the brain, which is also the master controller of the endocrinal system.

The glands do not work independently - each gland reacts with and modifies the influence of the other glands. Thus any disorder of the endocrinal system in general or in one of the glands alone can have negative repercussions on the health of the whole body. Yoga practices in general help to harmonize the entire system and render individual glands efficient.

The main glands in the endocrinal system are the pituitary, pineal, thyroid, parathyroids, adrenals, ovaries and testes. It is the two glands in the brain, the pituitary and the pineal, that we are interested in briefly describing here for it is these two glands that are influenced directly by sirshasana. The other glands are also influenced, but less directly.

Pineal gland

A very interesting, yet little understood gland is *the pineal gland.* The function of this gland is not certain and baffled medical scientists are still trying to unravel its secrets. It is located in the centre of the brain, and is pea-sized. Many people have regarded it as an organ that has lost its purpose in the evolutionary growth of man. That is, that it had a use when man was in a more primitive state. However, this is most unlikely, since it has an extremely high blood flow. Per unit weight, it has the second largest blood flow of all the organs in the body, being second only to the kidneys. This suggests that it has a most important functional duty, which has not yet become obvious to scientists. In time, its secrets will be revealed. Though its physiological role cannot be definitely ascertained, it is regarded as an endocrinal gland.

In yoga and other mystical systems throughout the world, the pineal is regarded as the physical equivalent of the third eye - the intuitive eye of revelationary knowledge. It is the eye of illumination. It is the physical organ that focuses knowledge or experience of more subtle realms of being into the brain for comprehension by the individual. It is analogous to a transistorized valve of a radio which picks up the electromagnetic waves from a far-off broadcasting station. This is not really a very good analogy, but it indicates what we are trying to convey. The pineal gland is the organ in the brain through which the individual can experience the more subtle levels of experience. It is also associated with the ajna chakra, the psychic centre that is concerned with psychic powers such as telepathy, clairvoyance, etc. It is through the pineal gland that psychic signals or phenomena are channelled into the brain and the body. It is the physical organ, associated with the more subtle ajna chakra, by which two individuals can communicate in a more subtle and direct manner.

Perfect functioning of the pineal is most important in yoga and can be brought about by sirshasana as well as other yogic techniques, which improve its large blood requirements and harmonize its relationship with the rest of the body and brain.

Pituitary gland

The pituitary is the master controller of the endocrinal system, though it is in turn controlled by the brain via the hypothalamus. It is a small pea-sized gland located near the top of the spine in the brain. It only weighs half a gram, but it exercises a vast influence on all the processes of the body. It regulates the production and secretion of the hormones produced by the glands. Without the sensitive control of the pituitary, the hormonal secretion of the other glands would create havoc in the body.

The pituitary gland produces a number of different hormones in small quantities. Some of these act directly on the body, but most of them trigger the functions of the other glands. In this way, the pituitary has widespread influences on almost everything that occurs within the body.

Somatotrophic hormone (STH) promotes body growth and the ability to resist disease. Without this substance, we would easily die from even the mildest infection, for it mobilizes the white blood cells and antibodies to protect the body.

Adrenocorticotrophie hormone (ACTH) directs and mobilizes the function of the adrenal glands. When the brain receives sensory nerve

impulses from the outside world which require quick or emergency response from the body, it stimulates the sympathetic nervous system and the pituitary, which in turn activates the adrenal glands; the adrenal glands secrete adrenaline which prepares the whole body for rapid reactions and actions. The entire process occurs very rapidly. ACTH also stimulates the secretion of other important hormones in the adrenal glands, including the glucocorticoids which act on the metabolism of food, and on the sex hormones.

The pituitary secretes a hormone called *thyrotrophin* which activates and controls the functioning of the thyroid gland. The thyroid performs a multitude of functions and if it is not functioning correctly then the whole body suffers drastically[3].

Pituitrin (also called pitressin) is concerned with the reabsorption of water in the kidneys and raising blood pressure.

Various sex hormones are secreted directly from the pituitary. The most important are the *follicle stimulating hormone* (FSH) and the *luteinizing hormone* (LH). FSH acts upon the follicle, the structure in the ovary in which the female egg develops. It causes rapid maturation of many follicles, so that the ovary enlarges to accommodate them. FSH also stimulates the hormone *estrogen* (estrin) which prepares the womb for growth of a baby (embryo). In men, FSH stimulates the production of sperm (spermatogenesis). Luteinizing hormone is associated with the monthly cycle of women. It also stimulates the production of another female hormone called *progesterone* (progestin) which is also concerned with preparing the body for the growth of a baby. In males, LH stimulates the production of the male sex hormone *testerone,* which specifically produces male characteristics in the body, such as hair growth, powerful muscles, deep voice and so forth. The pituitary also produces various other sex hormones, such as *lactogen andpitocin* which have other specific duties to perform.

The pituitary secretes a hormone called *diabetogenic hormone,* which has a direct influence on the liver and the production of insulin in the pancreas. This hormone is very important with regard to the understanding of diabetes. It is usually believed that the cause of diabetes is malfunctioning of the islets of Langerhans, the cells in the pancreas that secrete the hormone insulin. Because of this, the standard method of combating diabetes is to take a daily dosage of insulin. This does allow the diabetic to live a reasonably normal life, but it does not take into account the cause of the lack of secretion of insulin. Modern research is showing that the prime cause of diabetes is chronic mental stress which, among other things, interferes with the normal secretion of diabetogenic hormone from the pituitary. This explains why the pancreas of a diabetic is often found to be in good condition and no different from the pancreas of a healthy person. Yoga practices, including sirshasana, act directly to harmonize the functioning of the pituitary and to bring its relationship with the brain into balance. This helps to cure diabetes by encouraging the correct secretion of diabetogenic hormone from the pituitary gland.

There are many other hormones secreted by the pituitary gland, too many to discuss in this brief resume. The main purpose of this description is to indicate how vital the pituitary gland is in maintaining perfect health and functioning of the body. If it malfunctions then the whole body will suffer. Even if it works inefficiently, then there will be a tendency for the body to become unhealthy and for the individual to lose vitality. Sirshasana acts directly on the pituitary gland by improving its blood supply, and also the blood supply to its controller, the brain. It is for this reason that sirshasana can harmonize the entire endocrinal system and the multitude of functions that it carries out.

Blood supply to the brain

The human brain requires an enormous amount of oxygen which is transported to the brain via the blood system. To continuously supply large amounts of oxygen the blood flow to the brain has to be correspondingly large. The brain weight is only 2% of the total body weight, yet it requires about 20% of the total blood supply coming from the heart to keep it in good condition. This also implies that 20% of the oxygen taken into the body by the lungs goes to the brain. This huge supply is necessary in order to meet the demand of the highly active neurons.

There is little storage of oxygen in the brain. Therefore, if nerves are totally deprived of

blood for more than a few seconds, then they cease to function. If this continues for about five minutes then the nerves will die. This can lead to severe disturbance of the neurological functions. If the impoverished nerves can obtain enough oxygen from nearby blood vessels, they may be able to function for some hours or days, and eventually regain their working capacity. If the entire blood supply to the brain is stopped, then one will become unconscious in less than ten seconds. These facts clearly indicate the importance of an adequate blood supply to the brain and how sirshasana helps by supplementing the brain with an enriched blood supply.

Let us give a few more interesting facts. The average blood flow to the brain is about 750 millilitres per minute (according to *Human Neuroanatomy* by R. Truex and M. Carpenter). This perhaps does not sound very much, but if you do a short calculation you will find that this amounts to approximately 1080 litres per day, which is a lot of blood.

The number of blood vessels in the brain is colossal. Most of them are so thin that they can only be seen under a microscope. It is said that the total length of the blood vessels in the brain is more than 50,000 miles (though there are various other differing estimates). Can you imagine this length? It is twice the distance around the world at the equator. Perhaps now you are beginning to appreciate the density and complexity of the blood system of the brain, and how vital the blood supply is for perfect health and functioning. In certain regions of the brain, the network of blood vessels is so dense and the capillaries so fine that some penetrate between enmeshed individual nerve cells and some even pierce them (remember that the individual cells are very small, there being billions in the brain). This system of nerve cells and blood vessels must be nourished by a constant flow of fresh, oxygenated blood. If this nourishment does not reach the brain cells then brain power and efficiency will diminish.

General summary

We have spent a lot of time describing the prime organs and functions of the brain. There is much more that could be said, but this would require hundreds more pages. What we have tried to do is to show and emphasize that everything we do in life is totally dependent on perfect functional efficiency of all parts of the brain.

There are various factors that can interfere with healthy operation of the brain. The three main factors are:

1. chronic mental stress and conflict
2. insufficient respiration
3. bad blood supply

Let us discuss these points in turn

Excessive mental and emotional stress sustained for long periods of time tend to disrupt the whole brain and nervous system. The nervous system and brain is flooded with disharmonious nerve impulses placing the brain and nervous system under heavy pressure. In fact, we often say that a person who is tense has frayed nerves. This prolonged stress can eventually cause one or more of the bodily organs to break down under the strain. For example, excessive mental tension and frustration can make the heart beat too fast and raise the blood pressure; or the stomach secrete too much acid, resulting in ulcers; or put the endocrinal system under so much strain that one of its organs fails to perform its duties correctly as in the case of diabetes. The root cause of these illnesses is the mind, which in turn adversely influences the brain and the body.

Most people know that mental and emotional stress can lead to illness; but merely knowing this fact will not prevent the occurrence. There has to be positive steps. One of the best steps is to start practising yoga. This will help to calm the mind and bring about a state of mental harmony, which in turn will allow the brain to perform its duties unimpeded resulting in overall good health. The yogic practices can be meditational techniques, pranayama, relaxation methods and asanas. Among the asanas, sirshasana is one of the most useful for inducing mental peace and equanimity, and thereby bringing balance into the brain and physical body.

Malfunctioning and inefficiency of the brain can also arise from two more obvious sources - inadequate blood supply and lack of oxygen. These two factors are directly related with each other. Bad breathing can actually starve the body, including the brain, of oxygen. The health of the brain and body must decline under this condition. Inadequate breathing is

often done by people who do little exercise and who don't breathe deeply. Methods of overcoming this problem include the practices of pranayama and asanas. Sirshasana, once again, is a useful asana because it automatically induces slow and deep breathing in the final pose. Also, in the final position of sirshasana, the brain receives an abundant supply of oxygen due to the direct and downward flow of blood from the heart.

An inverted asana, such as sirshasana, is the most direct method of rectifying inadequate blood flow to the brain.

If the brain is not receiving enough blood, then a simple solution is to turn the body upside down for a few minutes every day. During this period, the whole system of the body and the brain can be toned up for the day. In this way, impurities will be removed from the brain and purified blood circulated to all the neurons. The benefits will be retained even when you return to the standing position again. The many benefits of sirshasana make it worthwhile including it in your daily practice program[1].

Notes

Topic 4 of this lesson

- Book II. Lesson 22, Topic 1

For further details on the thyroid gland refer to Book II. Lesson 16, Topic 2

Topic 4

The Chakras (Part 3)

Much is said about the evolution of consciousness as the chakras are awakened. This is incorrect. Consciousness cannot be evolved; it is ever existent. When the chakras are awakened, then the limiting factors of the mind, called maya, are slowly removed so that consciousness shines through more and more in its pristine glory. There is no evolution of consciousness when the chakras are opened up - there is an increase of awareness associated with purification of the mind. The term unfoldment of awareness or expansion of awareness is better than evolution of consciousness. But let us leave the treacherous world of semantics before we become tied up in too many knots. In this concluding topic on the chakras we want to 'tie up a few loose ends'[1].

Tabulation of chakra characteristics

There are a large number of traditional characteristics associated with the chakras. On the accompanying two charts we have listed some of these characteristics, omitting those that are less relevant for the sake of clarity. Some of the characteristics have already been discussed. The following are ones that perhaps need a little explanation.

Lokas: These are 'levels of awareness' or 'spheres of being'. They can be very roughly defined as follows:

- *Bhu* - earthly, material
- *Bhuvah* - intermediate
- *Swahah* - subtle maha - the abode of devas (divine beings)
- *Janah* - the abode of those who have transcended the ego
- *Tapah* - abode of enlightened siddhas (perfect beings)
- *Satyam* - truth

These lokas correspond exactly to the chakras and their meaning is the same. Each level indicates progressively higher heavens.

These different planes or spheres are also symbolized by the *sri yantra* (sometimes called *sri chakra)*[2]. If you look carefully, you will see that the central point is surrounded by a series of rings, one within the other. The largest ring, or the outer framework, is called the *bhupura* and represents the mooladhara chakra or the bhu loka. The other inner rings correspond to the other chakras and lokas.

Koshas: These are called 'sheaths' in English. They are live in number, and they indicate the five bodies of man, progressing from the gross physical to the subtle blissful sheath. They roughly correspond with the chakras as we have indicated.

Tattwas: These are unfortunately translated as 'elements' in English which tends to cause confusion, for the tattwas are incorrectly associated with the elements of science or the aspects of nature as fire, water, earth, etc. The tattwas indicate something much deeper and more subtle. For example, the earth tattwa is related to the mooladhara chakra. It does not mean earth of the variety in the garden; it means the specific frequency range of pranic vibration associated with the mooladhara chakra and which corresponds to the mind-body as a whole, including one's thoughts and awareness.

Likewise, water is associated with the swadhisthana chakra. Again this water tattwa does not mean the water that you drink, but that level of vibration or sensitivity that is higher than the earth tattwa and which corresponds to the swadhisthana chakra.

The same applies to the tattwas of the other chakras. They represent progressive refinement in one's being.

Bija mantras: These can be translated as 'seed sounds'. They are the specific mantras or sounds that correspond to the chakras. In a rough sense, they represent the resonant frequency of the chakras, though they imply much more.

We have only very briefly described these various aspects; to give a full exposition would

Chart 1: Chakra Characteristics

Chakra	Ascending order	Physical location	Lotus symbol	Lingam symbol	Granthi (psychic knot)	Guna (quality)
Mooladhara	1	perineum	four petals deep red	swayambhu	brahma	tamas
Swadhisthana	2	coccyx	six petals vermilion	—	—	tamas
Manipura	3	navel	ten petals bright yellow	—	—	rajas
Anahata	4	heart	twelve petals blue	bana	vishnu	rajas
Vishuddhi	5	throat	sixteen petals violet	—	—	sattwa
Ajna	6	top of spine	two petals silver-blue	itara	rudra	sattwa
— — —	*end of chakra realm*					
Bindu	—	back of head	—	—	—	—
Sahasrara	7	crown of head	one thousand petals all colours	para or jyotir	—	—

Chart 2: Chakra Characteristics

Chakra	Loka (level of awareness)	Kosha (sheath)	Tattwa (element)	Bija mantra (seed mantra)	Musical note Indian	Western
Mooladhara	bhu	annamaya (physical)	prithvi (earth)	lam (लं)	sa (स)	do
Swadhisthana	bhuvah	annamaya (physical)	apas (water)	vam (वं)	re (रे)	re
Manipura	swahah	annamaya (physical)	tejas (fire)	ram (रं)	ga (ग)	mi
Anahata	maha	pranayama (etheric)	vayu (air)	yam (यं)	ma (म)	fa
Vishuddhi	janah	pranamaya (etheric)	akasha (ether)	ham (हं)	pa (प)	so
Ajna	tapah	manomaya (mental) & vijnanamaya (intuitive)	—	aum (ॐ)	dha (ध)	la
— — —	*end of chakra realm*					
Bindu	—	—	—	—	ni (नि)	ti
Sahasrara	satyam	anandamaya (blissful)		—	sa (स)	do

require an entire book. We have introduced them to open your eyes to close correlations between these characteristics and the chakras. We want to show that these different concepts are not isolated; they are all part of a whole, and are really talking about the same thing in different terms.

The necessity of gradual awakening

In the yogic paths such as karma yoga, bhakti yoga or jnana yoga the chakras are only opened up when the time is right. That is, the cbakras awaken only when the individual has reached a certain degree of mental equanimity. This is generally such a smooth process that the chakras are not felt when they manifest. In the methods of kundalini yoga the awakening can be much faster. Because of this, great care has to be taken.

If there is too much force, or excessive willpower, then the chakras can open prematurely. They can open before the mind of the individual is sufficiently harmonized. This can cause severe mental disturbances, for the individual can be suddenly confronted with the most negative aspects of his subconscious mind. Possibly illness, physical and/or mental can result. One may become very angry and then very happy within a short space of time. One moment there may be optimism, the next moment pessimism. This occurs in the lower chakras.

But don't worry: premature awakening is very rare because it requires very strong willpower and unceasing practice (though the chakras can also be prematurely opened by other methods, such as drugs). For most people the chakras are gradually opened over a period of time.

This confrontation with one's deeper mental problems is absolutely necessary for those on the spiritual path wbo want to awaken the chakras and the potential of the mind. Sometimes it can be a little unpleasant, but it is the process whereby the mind is purged of all accumulated suppressions and neuroses. All the mental blocks, problems and conditioning are recognized and removed so that the mind becomes a progressively more refined instrument. But the process should be slow so that there is gradual adjustment between one's inner realization and the relationships with the outer world.

In summary premature awakening of the chakras, that is, premature ascent of the kundalini, can cause great unhappiness because one is suddenly confronted with the negative samskaras (mental impressions) that have not been worked out and neutralized. Imbalance of the body and mind can easily result. Though this is a rare occurrence we strongly advise you not to use excessive force or to be in too much of a hurry. The way is to aspire, to practise, but not to be impatient and expect instant results. Let things take their natural course through your diligent efforts.

The remodelling of the mind-body

The awakening of the kundalini, the awakening of the chakras, must be slow since the whole mind-body complex has to be gradually remodelled to take and withstand the new surge of power and pranic activity associated with expanded states of awareness. A common analogy given to illustrate this point is a light bulb and its electricity supply. Most people have a body that is comparable to a low or zero watt light bulb. Through yoga practices the flow of prana in the body increases. This brings states of illumination, but simultaneously the wattage of the light bulb - the strength and purity of the mind-body - has to be increased to withstand this extra flow of prana. If the electric power is too high for a bulb, then the bulb will blow. In the same way, if the prana flow is too great in the body-mind, then injury can easily arise. Therefore, we again emphasize that progress in tantra-yoga must be slow. Don't expect instant results. Let the body be gradually reformed in accordance with the ascent of the kundalini. Give the body time to open up and create new pranic pathways to channel the greater How of prana. And this is an amazing process; as awareness expands and the kundalini rises, so the incredible intelligence of the pranic body constructs new pathways (nadis) in the same way that the River Ganges creates new channels and gullies during the flood season. This process must occur, but it takes time. Don't be in a hurry. Progress slowly but surely. This is important.

General summary

We have just about exhausted the subject of the chakras and the kundalini. The most important thing is to awaken them. This is the

purpose of kriya yoga. Until we begin to introduce the actual kriya yoga techniques in Book III, we suggest that you practise the techniques that we are giving regularly and sincerely to locate the chakra points. This will ensure that you are fully prepared to gain the most out of the system of kriya yoga.

Notes

1 The Chakras: Part 1 - Book II, Lesson 19, Topic 1: Part 2 - Book II, Lesson 20, Topic 2

2 Book II, Lesson 13, Topic 6

Topic 4

Manipura Chakra

Manipura chakra is the third of the ascending chakras, mooladhara being the first and swadhisthana the second[1]. The manipura is a most important centre and is widely mentioned in traditional scriptures. In Buddhism, it is regarded as the seat of the kundalini, although in reality the kundalini can be regarded as residing in all chakras. Tantra yoga regards spiritual life, or expansion of awareness, as starting at the level of the mooladhara chakra, for it is here that man begins to become aware of himself, even if in a very rudimentary form. Therefore, the kundalini is said to reside at the mooladhara chakra level. Buddhism, on the other hand, regards expansion of awareness as beginning at the manipura chakra, the lower chakras being considered as instinctive levels of man, and therefore the kundalini is considered to reside at the manipura chakra. In this context, the abode of the kundalini is a matter of definition.

The manipura chakra is indeed the centre of prana within the human framework; it is the centre of the incredibly complex network of subtle energy that permeates and controls the body from behind the scenes. It is the centre that puts man directly in contact with the subtle forces of the cosmos. In this sense the kundalini can be regarded as residing in manipura. The Buddhist concept is perfectly correct. However, the mooladhara chakra is also a vital trigger centre that is very much concerned with directing pranic forces from the base of the spine upwards through sushumna to the higher centres. It is often associated with transmutation of sexual energy into more subtle pranic energy (ojas). Both of these chakras are centres of pranic energy but in a slightly different sense. It is for this reason that the Buddhist and tantra-yoga systems seem to differ. They adopt a particular aspect of the pranic energy in man and regard it as the power of the kundalini. The kundalini is actually the sum total of the dormant potential in man. Each of the chakra centres can be utilized to put man directly in contact with the pranic substratum of his being and to raise levels of awareness. Therefore, both Buddhist and tantra-yoga concepts are correct.

Definition

The Sanskrit word *mani* means 'gem' or 'jewel'; the word *pur* means 'city'. Therefore, the word *manipura* can be translated directly as 'the city of gems'. It is so called because of the intensity of the pranic energy at this centre. In the *Gautamiya Tantra* it says: "The manipura chakra is so called because it is lustrous like a sparkling jewel." (ch. 34) It is often compared to the dazzling power of the sun, which continually radiates energy to the planets. Without the sun there would be no life on this earth. In the same manner, the manipura chakra radiates and distributes pranic energy throughout the entire human framework; without this chakra, each person would be lifeless and totally devoid of vitality. It is also compared to a blazing fire, since it burns up and assimilates the energy in food in the same way that a fire burns up wood and releases the inherent energy. The absorption of energy in the human structure takes place at different levels - at grosser levels by absorbing the nutrients of food for the upkeep of the physical body and at a more subtle level by absorbing the more subtle essence of food to refuel the pranic body. The manipura is intimately related to this entire process at all levels.

This centre is also widely called the *nabhi chakra* - the navel chakra.

Attributes

This is the chakra level where people become very active and extroverted. They involve themselves with many external activities whether in work or play. Many people in the world are functioning at this level. They try to impose their will on other people and the world

around them. It is the centre where all things and other people are seen as a means to providing personal power and satisfying worldly ambitions.

The manipura is the centre of dynamism and energy. People at this level are predominantly rajasic (active and intense) in nature; the lower chakras, mooladhara and swadhisthana, are predominantly tamasic (lethargic and negative) in nature.

At the level of the manipura chakra people seriously begin to question their attitude towards life and their place in the scheme of existence. This is in accordance with the Buddhist concept that the kundalini resides in manipura. Until the level of manipura, people are not knowingly on the path to expansion of the mind.

Symbolism

The accompanying diagram of the manipura chakra speaks for itself. It is visualized as a bright yellow lotus with ten petals. On many traditional tantra-yoga diagrams the Sanskrit letters डं (dam), ढ़ं (dham), णं (nam), तं (tam), थं (tham), दं (dam), धं (dham), नं (nam), पं (pam) and फं (pham) are written on the petals. We have omitted these. In the centre of the lotus is a blazing sun representing the heat and energy of the chakra. Surrounding the sun is a red triangle in which is contained the seed (bija) mantra रं (ram). Little more needs to be said; in fact, any prolonged explanation will confuse more than clarify. Furthermore, intellectual explanations tend to create preconceptions without corresponding experience, which easily becomes a mental block.

Location

The physical trigger point of the manipura chakra is in the middle of the spine directly behind the navel. For the purposes of location in the early stages, it is worthwhile placing one finger on the navel and then placing a finger of the other hand on the corresponding location on the back at the same horizontal level. With the eyes open, adjust the position of the finger at the back and then press it firmly into the spine. Then feel the sensation of that exact point of pressure. In time, this will enable you to feel the precise position of the trigger point in the spine with the eyes closed.

Manipura kshetram

In kriya yoga practices, the area of the body directly in front of the manipura chakra area on the front surface of the body is also used as a point of awareness. This is called the ***manipura kshetram*** and is exactly located at the navel. You should develop the ability to locate this region. Most people should find it quite easy to feel and locate the manipura kshetram with the eyes closed.

MANIPURA CHAKRA LOCATION

Two excellent methods of locating the manipura chakra trigger point and the manipura kshetram are called ***uddiyana bandha*** and ***manipura shuddhi.*** These are practised as follows.

Stage 1: Uddiyana Bandha

Those who have been practising the pranayama lessons regularly according to the instructions that we have given will be fully familiar with this bandha[2]. For the purposes of locating the manipura chakra and kshetram the technique is as follows:

Sit in a comfortable position, preferably one of the traditional meditative asanas, with the knees flat on the ground[3].

Perform uddiyana bandha.

Be aware of the navel.

Practise a number of rounds for about 5 minutes.

Then stop uddiyana bandha.

Fix your attention on the blood pulse at the navel. You should distinctly feel it.

After a few minutes, transfer your attention to the manipura chakra trigger point in the spine; if necessary you can physically locate this region with your finger as described under the previous heading 'Location'.

Try to feel the blood pulse at this point.

Continue in this manner for a few minutes.

Then if you have time, again do a few more rounds of uddiyana bandha.

Then again be attentive to the blood pulse at the manipura kshetram and chakra for a few minutes each.

Repeat the entire process again if you have time. Then proceed to stage 2.

Stage 2: Manipura Shuddhi

The Sanskrit word ***shuddhi*** means 'purification'. Therefore, this technique can be called the

'manipura purification' in English. The method is as follows:

Take a comfortable sitting position.

Hold the back straight. Keep the eyes closed.

Breathe slowly and deeply.

Feel the contraction and expansion of the navel as you breathe in and out.

Feel as though you are breathing in and out at the navel (manipura kshetram).

Fix your whole attention at the navel.

Feel that the breath is being drawn from the manipura chakra trigger point in the spine through the navel and outwards as the abdomen expands during inhalation.

Feel that the breath is being pushed inwards through the navel to the manipura chakra in the spine as the abdomen contracts with exhalation.

Be attentive to this rhythmical process.

Continue in this manner for at least 10 minutes.

Then combine the mantra Aum with the inhalation and exhalation of breath.

You should still continue to feel the movement of breath inwards and outwards, but it must be now synchronized with Aum.

Feel the breath and mantra piercing the navel (manipura kshetram) and the manipura chakra in the spine.

Continue in this manner for as long as you have time available. Be attentive.

Practice note

Try to practise the two techniques that we have described every day until fully mastered, and before proceeding to the next stage. If you don't have sufficient time available try to do at least one of them every day.

In this lesson we have described ajapa stage 2[4]. Try to integrate this practice with the location of the manipura kshetram. That is, at the end of exhalation feel the manipura kshetram being pierced, and feel the breath being pulled upwards from the manipura kshetram during inhalation.

Notes

[1] Mooladhara chakra - Book II, Lesson 19, Topic 2; Swadhisthana chakra - Book II, Lesson 20, Topic 3

[2] Book II, Lesson 18, Topic 3

[3] Book I, Lesson 7, Topic 2

[4] Topic 5 of this lesson

Asanas: Sirshasana (Part 1)

The most well known asana must be the headstand pose - *sirshasana*. Even those people who have no contact with yogic aims and practices have heard of this asana. They have the prevalent concept of a yogi in a loincloth standing on his head for many hours everyday, with his bed of nails beside him on which to relax afterwards. This concept usually comes from the favourite cartoon portrayal of the yogi in this position. Recently, in fact, we saw a cartoon in which a most unlikely looking man was standing on his head while studying a book. When his wife asked him what he was doing, the man replied: "I have heard that the headstand improves memory, so I'm studying for my exams in this position." In one of our ashrams overseas the milkman places the milk bottles upside down on the doorstep every morning. He explained to the resident swami that he did it after having seen a cartoon about a milkman who did this when he delivered milk to a man who practised yoga. So sirshasana is inseparably associated with yoga.

Though there are a lot of exaggerations connected with sirshasana it is nevertheless a wonderful asana. It can give many benefits if it is done correctly. If it is done incorrectly, or by the wrong people, it can cause more harm than good. It is sometimes called the king or the best of all asanas. This is a slight over-estimation for all asanas have their place. Sirshasana alone is not sufficient to give perfect health. Although it will help very much it has to be supplemented by other asanas that have specific influences on other parts of the body. It is a combination of asanas and daily practise that brings overall good health; it is not one asana no matter how good it may be.

We intend to describe all aspects of sirshasana in two parts[1], which is necessary for two reasons: firstly, sirshasana and all associated details will require a lengthy description; secondly, it is an asana which should be gradually developed and mastered. All asanas should be slowly developed, but this is especially true of sirshasana. If you try to master sirshasana too quickly, then tbere is the likelihood of a fall from the final pose and injury to the body. Also the body must be gradually accustomed to the extra burden of prolonged durations in the inverted position; failure to do this could lead to harmful effects on the bodily system. We are therefore presenting sirshasana in two parts, which means that you, the practitioner, will be more likely to spend the necessary time preparing your body for the final pose by practising and perfecting the initial stages given in this topic. There will be less chance of anyone vaulting or catapulting themselves into the final position like an acrobat and falling flat on his back.

SIRSHASANA
(HEADSTAND POSE) - PART 1

The Sanskrit word *sirsha* means 'head'. Therefore, this asana can be translated as the 'headstand pose'.

Strange though it may seem, sirshasana is not mentioned or described in any of the well-known yoga scriptures. Considering the benefits that it gives, this seems at first a little surprising. But more than likely the asana was passed on from guru to disciple byword of mouth and personal tuition. In this way, there was less likelihood of sirshasana being practised incorrectly and thereby causing harm. It is only in recent years that sirshasana has been fully explained in books and become widely popular with large numbers of people.

Possibly the following quotation from the *Gherand Samhita* describes sirshasana under a different name: "The solar region is located in the navel and the lunar region is located at the root of the palate. Nectar drops downwards from the lunar region to the solar region and is absorbed; so do men die. Hold the navel upwards and the lunar region downwards. This

is called vipareeta karani mudra, secret of the tantras. The head should be placed on the ground together with the arms. Point the legs upwards, keeping the head firmly on the ground. This is vipareeta karani mudra according to the yogis." (verses 3:28, 29, 30)

There is a similar quotation in the *Hatha Yoga Pradipika,* There is in fact a well-known mudra called vipareeta karani mudra, which is an important part of kriya yoga[2]. But far more is implied in the practice than given in the above quotation. The above description is so vague that it could actually apply to and fit sirshasana, sarvangasana[3], and any other inverted asanas, as well as the practice of vipareeta karani mudra as we know and understand it. It is possible that sirshasana was known by a different name and that it, as well as other inverted asanas, were collectively known by the name of vipareeta karani mudra, sirshasana being a modern name. We don't however, intend to discuss this point further, for it is only supposition and certainly not very important. The main thing is the practise of sirshasana and the benefits that it gives.

Place of practice

Sirshasana should be practised in an uncluttered area, free of furniture and any other objects. This is necessary, so that if you fall you will be able to land correctly on your feet and not sustain injury. If you fall and land on top of a nearby chair, for example, then you are likely to break a few bones, or at least strain the body in some way. So make sure that the area in which you practise is perfectly clear of obstructions for at least two and a quarter meters in all directions.

The ground should be smooth, flat and firm. Don't practise on sandy or rocky ground, on any slippery surface, or on any surface that is not horizontal.

The support of a wall

Beginners can if they wish practise near a wall, especially if they are unsure of themselves. In this case, it is important that the back of the head is placed a little more than thirty centimetres from the wall in the starting position. This is important because if you place your head nearer to the wall, then the wall will prevent you raising your body into the final pose. On the other hand, if you place your head further away from the wall, then you may fall against the wall and injure yourself; instead of being an aid, the wall will become an obstruction.

The wall is to be used only to prevent any backward overbalance; it should not be used to perform the asana in anyway. When you gain confidence and proficiency we recommend that you discard the wall and practise in the middle of an open space. This will further help to develop your sense of confidence.

Method of falling

Before starting to practise sirshasana you should make sure that you know how to fall properly, especially if you practise away from a wall. This is not being pessimistic; it is a worthwhile precaution. It is better to be safe than sorry, as the well-known saying goes. We don't expect you to fall, but it can happen even to those people who have been practising sirshasana for years.

If you fall the body should be relaxed; don't stiffen the body. You must allow the body to fall like a sack. If you fall forwards, that is, the same direction as your face, then you should fold the knees into the chest as much as possible. The impact on the floor should be sustained by the feet only. If you fall backwards, that is, behind the head, then the back should be arched as much as possible. The impact again should be sustained by the feet. No part of the back should hit the floor before the feet.

Blanket

More than any other asana, sirshasana should be practised on a blanket, mat or thin cushion. It should be neither too soft nor too hard; neither too thick nor too thin. The blanket should be such that it protects the top of the head from the hardness of the floor, but not so spongy, soft and thick that it prevents one taking a firm base on the hands and head. We recommend that you practise on a blanket that is folded four times.

Correct position of the head

There are conflicting opinions on this subject. Some people say that the forehead must rest on the floor, while others say that the top (crown) of the head should rest on the floor. If one supports the weight of the body on the forehead, then the spine will be curved in the

final pose, especially in the region of the neck. It the weight of the body is supported by the top of the head then there is a tendency for the body to be unstable in the final pose. From our experience we have found that the best position of the head is midway between these two extremes. That is, the head should be placed so that a point midway between forehead and the top of the head rests on the blanket. You must experiment for yourself to find this position. If you feel comfortable with the forebead or crown of the head on the floor, then practise in this way.

Position of the hands and arms

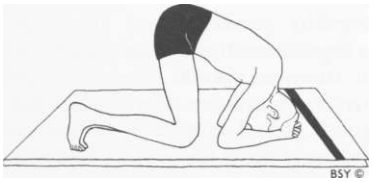
The fingers of the hands should be interlocked behind the back of the head. The hands should be wrapped around the head; they should not be placed under the head. The hands should be adjusted so that they firmly support the head.

The forearms and elbows of both arms should lie flat on the floor. The distance between the elbows should be the same as the distance between the elbow and interlocked fingers of each hand (at the back of the head). Thus the forearms will form two sides of an equilateral triangle, the distance between the two elbows forming the other side. This is the most stable base that supports the body in all directions.

TECHNIQUE

The first three stages

The first three stages should be perfected before proceeding to the last three stages[1]. This is essential so that you gradually develop control over your body and accustom the muscles and brain to a new mode of operation.



Stage 1: starting position

Place your blanket on the ground.

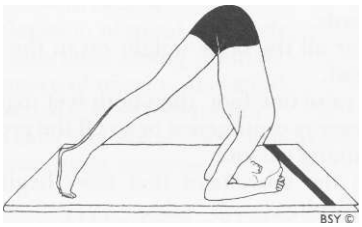
Kneel in front of the blanket with the feet together or apart.

Interlock the fingers.

Place the forearms flat on the blanket so that they form an equilateral triangle, the distance between the two elbows being equal to the distance between each elbow and the palm of the hand.

Lean forwards so that the head rests on the blanket just in front of the clasped hands, the area of the head halfway between the forehead and the crown should rest on the blanket.

Wrap the interlocked hands around the back of the head and adjust them so that they firmly support the head. Remember that the hands act as a framework for the head, they should not act as a cushion.



Stage 2: straightening the legs

Make sure that the starting position is comfortable and firm.

Straighten the legs so that the body is supported on the head, two arms and the toes of both feet.

Slowly bring the toes nearer to the face; this will progressively make the back move towards the vertical position.

At a certain stage, it becomes impossible to move the feet nearer the face with the legs straight, without pushing and overbalancing the trunk backwards.

This is the final position as shown.

Most of the weight of the body is supported by the head in this position.

Adjust your position so that you feel comfortable then proceed to stage 3.

Stage 3: raising the feet

Keeping the trunk vertical, slowly bend the legs.

Bring the thighs as close as possible towards the chest.

Make sure that you don't overbalance.

This stage may be a little difficult if you have a stiff body; don't proceed beyond this point until you can comfortably bring the thighs

close to the trunk without the slightest tendency to topple backwards.

The last part of stage 3 is difficult unless the trunk is as vertical as possible with the centre of gravity as far back as possible; therefore try to position your trunk so that it is as vertical as possible, but without losing balance and falling backwards.

Transfer all the body weight on to the arms and head.

Try to raise one foot, then both feet together about twenty centimetres or so off the ground, maintaining balance.

This is the movement that most beginners find difficult.

Usually this difficulty arises because of the inability to make the trunk vertical, which prevents the feet being raised without toppling forwards or backwards.

With time and practice, it will become easier.

If you feel stable then raise your two feet a little higher, again establishing the balance of the body.

If you feel any instability, then let the feet drop lightly onto the floor, and repeat the process.

Don't let the body overbalance backwards; it is preferable to let the body overbalance forwards. If you are not sure of yourself then practise near a wall.

This stage is not really difficult, but it may require a little time and practice.

Don't raise your feet more than, say fifteen centimetres off the ground until you are absolutely confident that you can raise them higher while maintaining balance. Then proceed to stage 4[1].

Warning

Don't swing your legs upwards in stage 3; this is the quickest way to overbalance and land flat on your back. Do every movement smoothly and with control, by contracting the back muscles and slowly readjusting the position of balance (centre of gravity) as you raise your legs.

Suggestion

We suggest that you practise these first three stages until you gain the correct balance and confidence to proceed to the last three stages of sirshasana[1]. This may take anything from a week to a month, or even longer. Progress carefully and don't strain yourself. Don't practise if you have any serious ailment, and be sure not to practise immediately after taking food.

Notes

[1] Book II, Lesson 22, Topic 3
[2] Book III, Lesson 25, Topic 4
[3] Book II, Lesson 16, Topic 2

Meditation: Ajapa Japa (Stage 2)

Ajapajapa is a method of exploring the deeper realms of the mind and eliminating mental Droblems. In the initial stages the mantra functions on the surface level of your mind, but in time and with regular practice it will permeate and plummet into the deeper subconscious realms. It is then that you will start to come face to face with your deep-rooted fears, worries, desires and neuroses. All these negative aspects of your mind come to the surface or rather they come within the range of your conscious perception.

Sometimes these aspects of your mind can explode very quickly. You may become a little unhappy for some time, but if you persevere then these problems will be neutralized and you will emerge on the other side with a more harmonized and contented mind. Try to continue the practice no matter how much negative dross arises; only stop the practice if it stirs up too much of the murky aspects of the mind, too quickly. In this case, you can recontinue the practice at a later date.

In the process of cleaning out the mind it is a good idea to combine ajapa with chidakasha dharana[1]. In this case, you will see the subconscious contents of the mind in the form of images on the mind screen (chidakasha) in front of the closed eyes. These will be like dreams, but you will be fully conscious of them. These will be images of your deeper problems. In Sanskrit they are called samskaras (mental impressions) and vasanas (deep-rooted desires). Don't suppress these images or react to them. You must merely be aware of them and watch them with an attitude of an unconcerned witness. You must feel as though they are something separate from your being. In this way, these samskaras will be exhausted and the mind will be relieved of much tension and anxiety. This will take time and practice, but is essential in making the mind a perfect instrument.

Basic features of ajapa

As a reminder, the following are the important points of ajapa.

1. Deep and rhythmical breathing
2. Continuous awareness of the breathing
3. Continuous repetition of mantra synchronized with breath
4. Relaxation of mind and body
5. Comfortable sitting position
6. Practice of ujjayi pranayama[2]
7. Practice of khechari mudra[2].

If you can carry out all these features then you will make great progress.

AJAPAJAPA - STAGE 2

Technique

In stage 1 of ajapajapa you synchronized *So* with the incoming breath and *Ham* with the outgoing breath[1]. In stage 2 the process is very similar, but each breath will start with exhalation with the mantra *Ham* and end with inhalation with the mantra *So.* The mantra *Ham* is still associated with exhalation and *So* with inhalation (as in stage 1) but now the mantra will be *Hamso* instead of *Soham.* There should be no pause between *Ham* and *So* but a slight pause after one round of *Hamso.* This may seem a fine difference compared to stage 1, but it is nevertheless important.

Relaxation of the mind and body is essential before starting the practice. To achieve this you can do a series of asanas and pranayama and/or you can chant *Aum* a number of times. Adopt any suitable method.

As a means to become aware of the contents of your subconscious mind, you should periodically stop ajapa and do chidakasha dharana for a short duration. The method of stage 2 is as follows:

Take a comfortable sitting position.

Perform the same preliminary relaxation procedures as described for stage 1[3].

Chant *Aum* a number of times, say 13 times.

Then do khechari mudra and ujjayi pranayama[2].
Become aware of the breathing process for a short time making it deeper and slower.
Try to feel as though you are the process of breathing itself.
Then imagine the breath moving between the navel and throat.
Inhalation upwards from navel to the throat.
Exhalation downwards from the throat to the navel.
Be attentive to the rhythmic flow of breath.
Don't force; just be attentive to the natural process of breathing.
Watch the breathing become slower and slower.
If you find it difficult to imagine the up and down flow of breath, you can imagine that there is a glass tube connecting your navel to the throat.
The tube contains water.
As you breathe out the level of water drops from the throat to the navel.
Continue this practice for at least 5 minutes.
Then synchronize the mantra *Hamso* with the breathing. With exhalation downwards from the throat to the navel hear the sound *Ham.*
With inhalation upwards from the navel to the throat, hear the sound *So.*
Thus with each round of respiration you will hear *Hamso Hamso Hamso* and so forth.
There will be continuation between exhalation and inhalation, but a slight break between inhalation and exhalation.
Be sure to maintain awareness of the breath and the mantra.
After some time, say 5 minutes, leave ajapa and become aware of the space in front of the closed eyes. Watch any images that arise with an attitude of detachment; these are the contents of the subconscious mind.
Continue this for a few minutes.
Then return to the practice of ajapa with mantra and breath awareness.
After about 5 minutes, again observe the space in front of the closed eyes.
After a short time return to ajapa.
Continue in this manner for as long as you have time available.

Period of practice

This second stage of ajapa should be practised every day until the synchronization of the breath and the mantra occur without any effort. Then you are ready to progress to stage 3[4].

General

In this lesson we have described practices to locate the manipura kshetram located at the navel. This is the lowest junction of the movement of breath during ajapa. Try to clearly feel the exhaled and downward flowing breath penetrating the navel (manipura kshetram) and being drawn upwards from the same centre during inhalation. This will greatly help to develop your sensitivity to the exact position of this centre in preparation for kriya yoga.

Notes
[1] Book II, Lesson 13, Topic 5
[2] Book I, Lesson 6, Topic 5
[3] Book II, Lesson 20, Topic 5
[4] Book II, Lesson 22, Topic 5

Daily Practice Program

In this lesson we have introduced the manipura chakra together with practices for locating its trigger point in the spine, and for locating the manipura kshetram. We advise you to practise it regularly in order to develop sensitivity. Don't neglect techniques concerned with the mooladhara and swadhisthana chakras that we have discussed in the previous two lessons.

You should now proceed to ajapa stage 2, having learnt stage 1. Feel the breath and mantra piercing the manipura kshetram on the lower extremity of movement.

Slowly master the first three stages of sirsh-asana if you are able. Don't try to proceed beyond these three stages - mastery of this asana has to be slowly developed. If you have some ailment that is contraindicated for sirshasana, please don't attempt the asana without prior expert guidance.

Continue to practise pranayama in the manner described, according to your ability[1]. We don't want you to harm yourself - it is for this reason that we are giving you a long period to master this practice. Actually, the practices of pranayama don't need much describing: they require prolonged practice. It is only in this way that one will reap the benefits.

Practice	**Minutes**
Program 1: duration 2 hours	
Surya Namaskara	10
Shavasana	4
Shashankasana	4
Janu Sirshasana or Ardha Padma Paschimottanasana	4
Bhujangasana	4
Yoga Mudrasana	4
Ardha Matsyendrasana	4
Sarvangasana	4
Matsyasana or Supta Vajrasana	4
Sirshasana - stages 1, 2, 3	5
Tadasana	1
Shavasana	3
Nadi Shodhana Pranayama	15
Mooladhara and Swadhisthana chakra location	15
Manipura chakra location	20
Ajapa Japa - Stage 2	19
	120

Program 2: duration 1 1/2 hours

Surya Namaskara	5
Shavasana	3
Shalabhasana	4
Shashankasana	4
Janu Sirshasana or Ardha Padma Paschimottanasana	4
Bhujangasana	4
Ardha Matsyendrasana	4
Sarvangasana	4
Matsyasana or Supta Vajrasana	4
Sirshasana: stages 1, 2, 3	5
Tadasana	1
Shavasana	4
Nadi Shodhana Pranayama	10
Mooladhara and Swadhisthana chakra location	10
Manipura chakra location	10
Ajapa Japa - Stage 2	14
	90

Program 3: duration 1 hour

Surya Namaskara	5
Shavasana	3
Shashankasana	3
Janu Sirshasana or Ardha Padma Paschimottanasana	4
Bhujangasana	3
Ardha Matsyendrasana	3
Sirshasana - Stages 1, 2, 3	5
Tadasana	1
Shavasana	3
Nadi Shodhana Pranayama	10
Manipura chakra location	10
Ajapa Japa - Stage 2	10
	60

Program 4: duration 1/2 hour for general health benefits

Surya Namaskara	5
Shavasana	3
Janu Sirshasana or Ardha Padma Paschimottanasana	3
Ardha Matsyendrasana	3
Sirshasana - Stages 1, 2, 3	3
Tadasana	1
Shavasana	2
Nadi Shodhana Pranayama	10
	30

Try to find the time to practise Manipura chakra location and Ajapa Japa. This is important for kriya yoga.