



**FROM RITUAL THEORY TO A SPIRITUAL BIOLOGY:
Prayer and the Activation of Chakras-Hormones in
Human Metabolism**

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Abstract: Prayer as one of the essentials of human beings as "homo Deus", has become the object of studies from diverse perspectives: theosophical, sociological, psychological, phenomenological, and even political. This study will, however, shed light on this issue from another angle, namely a bio-spiritual standpoint, since the human being is made up of psycho-somatic features, or body, mind, and soul, with particular reference precisely to the human metabolism: endocrine system. This article will argue that human hormones, which have a pivotal role in human metabolism, are related to seven glands. These glands are actively managed to be stipulated by the activation of seven subtle energy centers, chakras, which can be done, among other things, by prayer (ṣalāh). To say the other way round, prayer (ṣalāh) will activate the seven chakras that will, in turn, stimulate the seven glands of the human endocrine system and will eventually boost the hormones that are significant for human life. In this way, this study will provide more illustration where "Scientia Sacra" (sacred science), concerning prayer (ṣalāh), meets "profane" science in a sort of "spiritual biology."

Keywords: human metabolism, hormones, endocrine system, glands, chakra activation, prayer, spiritual biology.

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Introduction

PRAYER is one of the spiritual legacies in human beings as "homo Deus," which has become the focus of discourses and research, ranging from theosophical comprehension, sociological congregation, psychological phenomenon, up to political dimension. A thoroughly fascinating book on this, *Islamic Prayer*

Across the Indian Ocean: Inside and Outside the Mosque,¹ has become "classic" in this manner, portraying this ritual, prayer, from myriad angles. In the classic Muslim traditions, particularly Sufism, prayer (*ṣalāh*) has become the object of reflection as the way toward God, usually under the title of "secrets of prayer" (*asrār al-ṣalāh*), wherein the Sufis try to reveal the prayer as the arcane highways, since prayer serves as, among other things, the locus of ascension to heaven/God (*mi'rāj al-mu'minīn*). This tendency has been preserved up to now, where the emphasis of religious discourses, when it comes to prayer (*ṣalāh*), is laid upon, or using Sufistic term "manifestations" (*tajalliyat*) of the divine worlds which is revealed (*mukāshafah*) on the prayer performer.

This paper will, however, go in a slightly different direction from the above classic Sufism's tendency and tries to "go a little bit down to earth."² This study will follow the direction of modern Sufism, projected among others by Agus Mustofa, who has published a series of books under the category of what he calls "serial diskusi tasawuf modern" (a series of discussions on modern Sufism), which includes: *Pusaran Energi Ka'bah*,³ *Terpesona di Sidratul Muntaha*,⁴ *Menyelam ke Samudera Jiwa dan Ruh*,⁵ *Bersatu dengan Allah*,⁶ and *Dzikir Tauhid*.⁷ In this series, Agus Mustofa tries to connect Sufism with modern science. In this direction, this article will maintain prayer indeed as the locus of "manifestations" (*tajalliyat*) of Divine grace upon the prayer performer. Yet, the

¹ David Parkin, *Islamic Prayer Along the Indian Ocean Littoral: Inside and Outside the Mosque* (London ;New York: Routledge, 2007).

² This expression was uttered by Prof. P.S. van Koningsveld, when he commented upon the writer's thesis proposal titled, "The Ontology of Evil: Theodicy in the Metaphysics of Syed Muhammad Naquib al-Attas," presented at Leiden University (2014), toward which the proposal was switched to another direction, and changed, under the supervision of Prof. Mohd Salleh Yaapar, to Aris Widodo, "Syed Muhammad Naquib Al-Attas ' Sematic Reading of Islam as Din," *Al-Jami'ah* 47, no. 1 (2009): 259.

³ Agus Mustofa, *Pusaran Energi Ka'bah* (Surabaya: Padma Press, 2006).

⁴ Agus Mustofa, *Terpesona Di Sidratul Muntaha* (Surabaya: Padma Press, 2004).

⁵ Agus. Mustofa, *Menyelam Ke Samudera Jiwa Dan Ruh* (Surabaya: Padma Press, 2005).

⁶ Agus. Mustofa, *Bersatu Dengan Allah* (Surabaya: Padma Press, 2005).

⁷ Agus Mustofa, *Dzikir Tauhid* (Surabaya: Padma Press, 2006).

manifestations take the form not solely of Divine worlds upon a human being but in the form of "bio-spiritual" transformations in human metabolism. If on the one hand, Taufik Pasiak talks about "neuro-sains spiritual" (spiritual neuro-science) in his book, *Tuhan dalam Otak Manusia*,⁸ and on the other side Solomon, Berg, and Dian copes with "biology,"⁹ this study tries to combine both in a sort of "spiritual biology," that is, biology, or precisely human metabolism, which is connected to spiritual matter, or in this case, prayer (*ṣalāh*).

In trying to combine the "spiritual biology," this article will start with the issue of "From Ritual Theory to a Spiritual Biology," where prayer will be depicted firstly from the theory of "ritual" and move toward the "spiritual biology." A stipulated definition of "ritual" that involves, among other things, "transformation" will be articulated further in the kind of "transformation" that takes place in the human body, mind, and soul. Thus articulated, as a vantage point, this issue takes into account "spiritual" (mind-soul) on the one hand, and "biology" (body), on the other. Hence, it combines what is called by Seyyed Hossein Nasr¹⁰ as "sacred science" (*scientia sacra*) and "profane" science.

The following section, "Hormones, Endocrine System, and Chakras: Understanding Human Metabolism," will set forth the human endocrine system, where it will be pointed out that hormones, which have a very significant role in human life, are connected to seven glands in the human body. After this issue has been clarified, this section will further investigate the seven glands that will be functioned when the seven subtle energy centers in the human body, chakras, are activated. The question that must be arisen is how to start the chakras?

The answer to this question in a detailed substantiation will be described in the following section, "Prayer and the Activation of Chakras." In exposing prayer and the activation of chakras, this

⁸ Taufiq Pasiak, *Tuhan Dalam Otak Manusia Mewujudkan Kesehatan Spiritual Berdasarkan Neurosains* (Bandung: Mizan, 2012).

⁹ Eldra P Solomon, Linda R Berg, and Diana W Martin, *Biology*, 8th ed. (USA: Thomson Books/Cole, 2017).

¹⁰ Seyyed Hossein. Nasr, *The Need for a Sacred Science* (Albany: State University of New York Press, 1993).

section will be based on Bernard Spilka's theory of human spiritual layers: (1) the raw experience, (2) the reflexive experience, (3) the incorporated experience, and (4) the attributed experience.¹¹

The raw experience refers to the experience that undergoes in a particular time, while the reflexive experience deals with an automatic report of the natural experience. Furthermore, the incorporated experience relates to the interpretation given to the reflexive experience; and the attributed experience signifies the interpretation of the incorporated experience following the categories of certain doctrines. In this case, this section will unfold the first and the second layer of the experience, i.e., the raw and the reflexive experience, where both layers were experienced by the writers of this article and by other people reported in their relevant books pertaining to the prayer and the activation of chakras.

After the premises of the above sections, the "Conclusion" will give the complete summary of the total wherein indicates that "prayer will activate the chakras, which will then stimulate the glands that will produce hormones, and will make human metabolism works properly." Finally, the following section remains the first section, which aims to discuss the term "From Ritual Theory to Spiritual Biology."

From Ritual Theory to Spiritual Biology

There are some ways to define "ritual." Victor Turner, as cited by Bowie, defines "ritual" as "prescribed formal behavior for occasions not given to technical routine, having reference to beliefs in mystical (or non-empirical) beings or powers regarded as the first and final causes of all effects."¹² Another theorist, Bobby Alexander, cited as well by Bowie, marks "ritual" as "a performance, planned or improvised, that effects a transition from everyday life to an alternative context where everyday is transformed."¹³

¹¹ Spilka Bernard et al., *The Psychology of Religion: An Empirical Approach* (New Jersey: Prentice-Hall, 1985), 181.

¹² Fiona Bowie, *Theories and Other Controversies: The Anthropology of Religion: An Introduction* (Oxford, UK ; Malden, MA : Blackwell Pub., 2006), 153.

¹³ Ibid.

Another definition, in a more detailed substantiation, is given by S.J. Tambiah, also cited by Bowie, who reads "ritual" as:

"a culturally constructed system of symbolic communication....constituted of patterned and ordered sequences of words and acts, often expressed in multiple media, whose content and arrangement are characterized in varying degrees by formality (conventionality), stereotypy (rigidity), condensation (fusion), and redundancy (repetition)."¹⁴

From the above-mentioned definitions, at least, there are three fundamental elements of the important features of "ritual" that is: *first*, the existence of behavior that is different from the everyday routines; *second*, the belief in the mystical or unseen entity; and *third*, the occurrence of life transformation. Thus, a specific definition can be made that "ritual" is "a prescribed formal behavior, with patterned and ordered sequences of words and actions, to have a connection with the mystical/unseen entity, which have an impact upon life transformation."

After defining "ritual," we can see that prayer (*ṣalāh*) performed by Muslims, for instance, fit into this category since prayer is "an obliged formal behavior" (*kitāban mawqūtan*),¹⁵ "with patterned and ordered sequences of words and actions," marked by the opening of "Takbirat al-iḥram" together with raising two hands, and closed by reciting "salām" with turning head to the right and left, by which these actions, transformation of life has occurred. What sort of life transformation will take place with the performance of prayer?

This question will become the concern of the following sections, which will articulate how prayer will stimulate chakras or energy subtle centers in human beings, which will, in turn, give impact endocrine systems so that hormones have pivotal roles in human metabolism and will function correctly. In this way, it will demonstrate how prayer as a ritual theory, marked finally by life transformation, will be followed by spiritual biology, where human metabolism is taken into account. The detailed discussion of this manner is presented as follows.

¹⁴ Ibid.

¹⁵ "'Qur'an, Chapter 4 Surah An-Nisa (Women): Verse 103.," accessed August 28, 2021, [https://quran.com/4/103?translations=17,18,19,20,21,22,85,95,84,101.](https://quran.com/4/103?translations=17,18,19,20,21,22,85,95,84,101)"

Hormones, Endocrine System, and Chakras: Understanding Human Metabolism

Human metabolism is much influenced by hormones: changes that take place in human metabolism are made possible with the mechanism of the endocrine system, where hormones serve as ordering and delivering the "messages" in the human body.¹⁶ Many hormones exist in the human body, connected to glands, organs, and biological functions. The list of these connections is given in the table below.

No	Gland	Hormone	Organ	Biological Function
1	Pineal/ Hypo-thalamus Gland	Melatonin, Dopamine	Many	Biological clock; Overall health and brain activity; circadian rhythm; sensation
2	Pituitary/Hypo- physis Gland	FSH/LH	Ovaries	Menstrual Cycle
		ADH	Kidneys	Osmo-regulation
		Growth Hormone	Many	Growth and Division
		Oxytocin	Uterus	Birth Contraction
		Prolactin	Breast tissue	Milk Production
3	Thyroid Gland	Thyroxin	Liver	Metabolic Rate
4	Adrenal/Thymus Gland	Adrenaline	Many	Immunity
		Cortisol	Many	
5	Pancreas	Insulin/glucag on	Liver	Blood Sugar Level, Healthy digestive system
6	Gonads Gland	Estrogen/ progesterone	Ovaries	Menstrual Cycle
		Testosterone	Testes	Male Characteristic
7	Prostrate and Fallopian Tube	Relaxing	Tail bone	(Birth) Contraction

From the above table, we can give a clear connection between hormones and glands as well as organs that have specific biological functions in human metabolism. The first hormones, melatonin, and dopamine, are connected to the

¹⁶ Solomon, Berg, and Martin, *Biology*, 1028.

pineal/hypothalamus gland, with many organs targeted, whose function serves as a "biological clock" and overall health and brain activity. Melatonin hormone also controls the circadian rhythm of the body, where the body must be in balance of melatonin hormone: the lack of this hormone may cause high blood pressure and high cholesterol that cause insomnia, depression, and trouble in heart-beat rhythm. The cause can be due to a person experiencing stress and fatigue. The hormone melatonin can be increased by doing sports. At the same time, too much excess of this hormone may cause trouble in speaking and headache.¹⁷ Meanwhile, dopamine controls emotions, movement, suffering, and happy sensations. A lack of this hormone can cause the brain's nerves to work ineffectively in sending signals. So that it can interfere with brain activity in regulating various cognitive and motor functions in the body; Meanwhile, excess dopamine can cause a person to experience aggressive behavior and have low self-control. This can be exemplified by overeating, addiction to something, and attention deficit hyperactivity disorder (ADHD) or a mental disorder that causes children to have difficulty in paying attention and focus, impulsive behavior, following directions, and completing tasks at home and school. This is because dopamine makes the brain only focuses on one part of the brain and less on other parts of the brain.¹⁸

The second cluster of hormones (FSH and LH, ADH, GH, Oxytocin, Prolactin), connected to the pituitary/hypophysis gland, refers to many organs with many functions: follicle-stimulating hormone (FSH) and luteinizing hormone (LH), referring to growth and development hormones and maturation of the follicle/egg cell. The primary function of the FSH and LH hormones in women is to ensure that the menstrual cycle runs smoothly, starting from the beginning of formation, ovulation, or the release of eggs from the ovaries, until the end of the menstrual period. At the beginning of the menstrual cycle, FSH hormone levels in the body will increase,

¹⁷ Tiina Pääkkönen, "Melatonin and Thyroid Hormones in the Cold and in Darkness. Association with Mood and Cognition," *International Journal of Circumpolar Health* 69, no. 3 (2010): 314.

¹⁸ Raven Peter H and Johnson George B, *Biology*, 6th ed. (New York: McGraw-Hill Company, Inc, 2002), 1084.

and the amount of LH hormone will decrease. It is used to stimulate the follicles in producing the estrogen and progesterone hormones. During the fertile period, the hormone estrogen will signal the pituitary gland to stop producing FSH and start making the hormone LH. If the FSH hormone stimulates the follicles to produce the hormones estrogen and progesterone, it is different from the LH hormone. The benefit of the LH hormone is that it triggers ovulation or the release of eggs from the ovaries. The egg follicle that has been released will turn into a corpus luteum or empty hair. Furthermore, the corpus luteum will terminate the hormone progesterone to thicken the uterine wall tissue to prepare for pregnancy. If there is an excess of FSH and LH hormones, it will cause the hormones to not work as they should. However, if the levels are too low, it can cause infertility in women.¹⁹

Meanwhile, the function of the hormones FSH and LH is different in the male body, although it is still related to the reproductive system. In the male body, these two hormones will ensure the process of forming healthy sperm cells (spermatogenesis) in men goes well. Sertoli cells in the testes require the hormone FSH to produce androgen-binding proteins. After that, the LH hormone is secreted by the pituitary gland, which stimulates the Leydig cells to produce testosterone. The low testosterone produced will affect the quantity and quality of sperm. Similarly, in women, if FSH and LH levels are low, it will result in not working properly. However, if the levels are too low, it can lead to infertility in men.^{20 21}

Antidiuretic hormone (ADH), point to the kidneys, and function as osmoregulation. i.e. plays a role in regulating the amount of fluid in the body and help to retain water by telling the kidneys that it is excreted through the urine. In its mechanism of action, ADH affects the water absorption process in the renal tubules. If the amount of ADH is large, the absorption of water by the tubular walls will increase so that little urine is formed.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Daniele Santi et al., "Follicle-Stimulating Hormone (FSH) Action on Spermatogenesis: A Focus on Physiological and Therapeutic Roles," *Journal of Clinical Medicine* 9, no. 4 (April 3, 2020): 1014.

Conversely, if ADH is lacking, water absorption by the tubular walls decreases so that more urine is produced.²²

Growth hormone (GH) is a hormone that regulates the body's metabolism and triggers growth in childhood and adolescence. The mechanism of action of GH stimulates the release of somatomedins and affects protein, carbohydrate, as well as fat metabolism. Excess GH will cause a person to experience acromegaly. This condition causes excessive growth of several organs, as well as muscle and bone tissue, especially in the feet, hands, and face. Medium gigantism is a disorder in which excessive amounts of growth hormone are secreted from the pituitary gland during childhood. GH will peak at puberty and decline when entering middle age. Lack of this hormone will affect the growth and development of children.^{23 24}

Oxytocin point to the uterus; before delivery, the woman's body will produce the hormone oxytocin, whose function is to stimulate uterine contractions. In addition, oxytocin will increase the production of prostaglandins so that contractions become more frequent and affect the opening process before giving birth. Oxytocin is touted as the love hormone that will affect a person feel more relaxed and reduce stress and excess anxiety. The hormone oxytocin is secreted a lot during childbirth; it will also help facilitate the milk that has been produced. Lack of oxytocin can lead to depression. Prolactin refers to breast tissue and will promote milk production in nursing mothers. The mechanism of action of prolactin is when the baby suckles, there is sensory stimulation from the nipple to be sent to the brain. Then it responds by releasing the hormone prolactin, which will return to the breast through the bloodstream, and stimulate other cells to

²² Solomon, Berg, and Martin, *Biology*, 1029.

²³ Diego Caicedo et al., "Growth Hormone (GH) and Cardiovascular System," *International Journal of Molecular Sciences* 19, no. 1 (January, 2018): 290.

²⁴ Rebecca B. Urry, Lisa A. Cai, Michael L. Wasserman, Steven. Alexander, Minorsky. Peter V. Orr, *Campbell Biology, Biology*, 12th ed. (New York: Pearson Education, Inc, 2020), 1037, 1037

produce breast milk. However, in men, prolactin that is too high can affect fertility.²⁵

The third hormone, thyroxine, is produced by the thyroid gland in the neck, which functions in controlling metabolism, namely body temperature, heart rate, blood pressure, appetite, and absorption of nutrients-calcium. Thyroxine deficiency in children causes mental disorders and stunted growth. Whereas in adults, it causes a decrease in body metabolism, which is characterized by easy fatigue, muscle aches, slow reflexes, slowing of the mind, and intolerance to cold temperatures. Excess thyroxine can cause goiter or swelling in the neck due to an enlarged thyroid gland.²⁶

The fourth hormone, adrenalin and cortisol, are connected to the adrenal glands, which refer to many organs. Sequentially plays a role in the immune system and anti-stress. The hormone adrenaline (epinephrine) will be produced when the body feels stressed, depressed, afraid, happy, and in a stressful or dangerous situation, along with the hormone cortisol. The mechanism of action of the adrenal hormone: when the body is in a stressful situation, the hormone adrenaline is rapidly released into the blood, sending impulses to the organs to create a specific response. Lack of this hormone causes the body to be unable to react appropriately when faced with threats, causing depression and sleep disturbances. Adrenalin hormone also serves to supply glucose and oxygen to the brain and muscles by accelerating the heartbeat, so this hormone is essential in nurturing the response system.²⁷

The fifth hormone, insulin and glucagon is connected to the pancreas and shows the function of the liver in regulating blood sugar levels. Insulin works together with glucagon. The role of insulin is to lower blood sugar levels by converting glucose into glycogen, while the role of glucagon is to increase blood sugar levels if they fall too low, the opposite of insulin. The excessive

²⁵ Cecei Starr, Christine A Evers, and Lisa Starr, *Biology Concept and Application* (USA: Cengage Learning, Inc., 2011), 504.

²⁶ Tortora Gerard J and Derrickson Bryan, *Tortora's Principles of Anatomy & Physiology* (New Jersey: John Wiley and Sons, 2017), 484.

²⁷ *Ibid.*, 486.

storage of insulin may cause low blood sugar and irregular heart-beat rhythm, while lack of insulin may cause high blood sugar that raises the disease of diabetes mellitus (DM).²⁸ When the pancreas secretes glucagon, insulin production is suppressed. Glucagon will signal the liver and muscles to break down glycogen into glucose and release it back into the bloodstream. This aims to keep blood sugar levels from falling too low.

The sixth hormone, estrogen, progesterone, and testosterone, refer to the ovaries and testes. The hormone estrogen plays a role in regulating female secondary characteristics and the reproductive process. At the same time, the hormone progesterone plays a role in controlling uterine wall tissue and regulating the menstrual cycle. In pregnant women, progesterone functions to maintain pregnancy by keeping the uterine muscles relaxed and maintaining the thickness of the uterine wall during fetal development, as well as producing a placenta for fetal life. The hormone testosterone functions as a male reproductive hormone that stimulates the maturation of male reproductive organs, muscle mass growth, strength, and changes that occur in men at puberty, such as an enlarged voice and hair growth.²⁹

The last hormone, relaxin, produced by the ovaries and placenta, refers to the tailbone, which will be produced naturally by the body when a woman is pregnant. Its function is to help prepare for labor by loosening ligaments, bones, and pelvic muscles as well as widening and softening the cervix.³⁰

The above hormones, which are connected to certain glands and point to particular organs that make human metabolism function properly, can be stimulated by subtle energy centers in human beings, "chakras." This Sanskrit word, *chakra*, refers to "wheels of energy throughout the body."³¹ There are seven main chakras in the body: muladhara, swadishtana, manipuraha, anahata, visudhi, agna, and sahasrara. The first chakra,

²⁸ Jane B. Reece et al., *Campbell Biology*, 10th ed. (Boston: Pearson Education, Inc, 2011), 8.

²⁹ Gerard J and Bryan, *Tortora's Principles of Anatomy & Physiology*, 485.

³⁰ Reece et al., *Campbell Biology*, 867.

³¹ Shah Parita, "What Is a Chakra? - A Primer On Chakras," accessed May 31, 2022, <https://chopra.com/articles/what-is-a-chakra>.

Muladhara, is from the Sanskrit words *Mula* (root) and *adhara* (support), which is located at the base of the spine and provides a sense of safety and security.³² The second chakra, swadishtana, from the Sanskrit words *swa-dishtana* (the dwelling of the self), which is located above the public bone and below the navel, provides a sense of wellness, abundance, pleasure, and joy.³³ The third chakra, manipuraha, from the Sanskrit word *Manipura* (lustrous gem), which is situated around the navel, refers to personal power and self-esteem.³⁴ The fourth chakra, anahata, from the Sanskrit word *anahata* (unstruck/unhurt), which is located at the center of the chest, signifies love and compassion." The fifth chakra, visudhi, which is located in the area of the throat, provides the source of verbal expression to speak.³⁵ The sixth chakra, agna/ajna, which is situated between the eyebrows, is the center of intuition. The seventh chakra, sahasrara, located at the crown of the head, provides a connection to higher realms.³⁶



Figure 1. Seven chakra in the human body³⁷.

³² Michelle Fondin, "Root Chakra: Muladhara - Yoga Poses & Meditation," accessed May 31, 2022, <https://chopra.com/articles/the-root-chakra-muladhara>.

³³ Michelle Fondin, "Awaken Your Creativity With the Sacral Chakra, Svadhisthana," accessed May 31, 2022, <https://chopra.com/articles/awaken-your-creativity-with-the-sacral-chakra-svadhisthana>.

³⁴ Michelle Fondin, "Find Power & Energy in Your Solar Plexus with Manipura Chakra," accessed May 31, 2022, <https://chopra.com/articles/your-third-chakra-find-power-and-warrior-energy-in-your-solar-plexus-manipura-chakra>.

³⁵ Parita, "What Is a Chakra? - A Primer On Chakras."

³⁶ Ibid.

³⁷ Susan Daniel, "The Seven Chakras," accessed May 24, 2022, https://www.google.co.id/books/edition/The_Seven_Chakras/OVc0BwAAQBAJ?hl=id&gbpv=0.

The mechanism of chakra stimulation toward glands can be described systematically in the table below.

No	Chakra	Glands	Hormone(s)	Psychological Function
1	Sahasrara (crown chakra)	Pineal / Hypothalamus Gland	Melatonin, Dopamine	Spiritual Growth
2	Ajna (third-eye chakra)	Pituitary / hypophysis Gland	Growth hormone (GH), Adrenalin, Oxytocin, Antidiuretic Hormone (ADH).	Balancing all glands, Intuition/ sixth sense
3	Visuddha (throat chakra)	Thyroid Gland	Thyroid and parathyroid hormones	Emotional Balance
4	Anahata (heart chakra)	Thymus Gland	Thymus hormone (immune system).	Fight or Flight, Anti-stress
5	Manipuraha (solar-plexus chakra)	Pancreas Gland	Serotonin (digestion), insulin (pancreas), dopamine (kidney), adrenalin	Confidence, productivity
6	Swadishtana (sex/tantian chakra)	Ovary and Testis	Reproductive hormones (testosterone, estrogen, progesterone)	Positive Vibes, Stability
7	Muladhara	Tail-bone/base-line	Relaxing.	Stamina, grounding standpoint.

From the table above, the hormones connected to particular glands can be triggered by stimulating specific chakras, as follows. First, melatonin and dopamine hormones, connected to the pineal/hypothalamus gland, can be produced by activating the “crown/Sahasrara” chakra. This will, in turn, in psychological function, activate spiritual growth.³⁸

The second cluster of hormones (growth hormone/GH, adrenalin, oxytocin, antidiuretic hormone/ADH), which are

³⁸ Parita, “What Is a Chakra? - A Primer On Chakras.”

connected to the pituitary/hypophysis gland, can be stimulated by activating the "third-eye/agna" chakra, that will, in psychological perspective, have an impact upon balancing all glands and the sharpening of intuition/sixth sense. Third hormones, thyroid and parathyroid, which are connected to the thyroid gland, can be manifested by activating the "throat/visudhi" chakra. This will, in turn, give and influence emotional balance. The fourth hormone, the thymus, which is connected to the particular gland, also called "thymus," will come active by triggering the "Anahata/heart" chakra. When this is properly done, it will psychologically produce immunity: anti-stress.³⁹

The fifth cluster of hormones—serotonin (digestion), insulin (pancreas), dopamine (kidney), and adrenalin—that are connected to the pancreas gland can be produced by the "solar-plexus/manipuraha" chakra. From a psychological viewpoint, this will be followed by the emergence of confidence and productivity.⁴⁰ The sixth hormones, called reproductive hormones (estrogen, progesterone, and testosterone), which are connected to ovary and testis, can be stimulated by activating the "sex-tantian/swadishtana" chakra. This will, in turn, from a psychological standpoint, enable positive vibes and stability. The final hormone, relaxing, which is connected to the base-line/tail bone, that can be stimulated by activating "Muladhara" chakra. When it is correctly performed, this will give the feel of a grounding position.⁴¹

After articulating that the hormones, which are connected to particular glands in the human body, can be produced by activating specific subtle centers of energy, chakras, in human beings, the next question will be how to start the chakras. The following section will cope with this matter.

Prayer and the Activation of Chakras

Prayer (*ṣalāh*), which fits the category of "ritual" as heretofore mentioned, involves actions/poses, or in Yogic culture called

³⁹ Gerard J and Bryan, *Tortora's Principles of Anatomy*, 487.

⁴⁰ *Ibid.*, 488.

⁴¹ *Ibid.*

"asanas" and words. The actions of prayer consist of seven poses (asanas): standing gently, bowing-down (*ruku'*), stand-still (*i'tidal*), prostration (*sujūd*) twice, sitting between prostration (*iftirasy*), and sitting of two "greetings to God" (*tahiyyat*, *awwāl*, the first; and *ākhir*, the final). These actions of prayer are a sort of meditation of energy.⁴²

The amount of resulted energy corresponds to the level of the prayer performers' concentration (*khushu'*),⁴³ which includes tranquility (*tuma'nīnah*) and patience (*ṣabr*) in doing the prayer.⁴⁴ It is in this way that Qur'an combines the prescription of prayer and patience,⁴⁵ and illustrates patience as the source of energy.⁴⁶ The performers of prayer may vary in the degree of their patience and concentration when doing the prayer so that a prayer performer may gain energy that surpasses ten persons' power. Yet, another prayer performer may gain a point that exceeds "only" two persons' power, in accordance with the degree of patience and concentration that influences the amount of energy.

In addition to patience and concentration, the words recited along with the actions of prayer strengthen the energy: the terms have a physiological impact on the body. In his "Medical Introduction" ("Pengantar Medis") for his work *Mukjizat Gerakan Shalat*,⁴⁷ Sagiran, a doctor of anatomy, refers to a study by Larry Dossey, *Healing Words*, that words have a tremendous effect upon the body. So, the actions of prayer, together with the words, enable the performers to be in an "anatomic position": flowing through the bloodstream and neuro system.⁴⁸ Therefore, accompanied by

⁴² Mustofa, *Pusaran Energi Ka'bah*, 166.

⁴³ Ibid.

⁴⁴ HM Amin Syukur and Fatimah Usman, "Terapi Hati Dalam Seni Menata Hati / H.M. Amin Syukur, Hj. Fathimah Usman | OPAC Perpustakaan Nasional RI," accessed May 31, 2022, <https://opac.perpusnas.go.id/DetailOpac.aspx?id=383567>.

⁴⁵ "Qur'an, Chapter 2 Surah Al-Baqarah : Verse 45," accessed May 31, 2022, <https://quran.com/al-baqarah/45>.

⁴⁶ "Qur'an, Chapter 8 Surah Al-Anfal : Verse 65-69," accessed May 31, 2022, <https://quran.com/al-anfal/65-69>.

⁴⁷ Wratsongko Madyo and Sagiran, *Mukjizat Gerakan Shalat: Untuk Pencegahan Dan Pengobatan Penyakit* (Depok: QultumMedia, 2006), xxx.

⁴⁸ Pasiak, *Tuhan Dalam Otak Manusia*, 240.

the flowing of bloodstream as the carrier of, as well as the generator of energy (*prana*)⁴⁹ strengthened by words, the actions of prayers can function as activating the “wheels” (chakras) in the body to operate. The detailed substantiation will be set forth below.

Prayer (*ṣalāh*) starts with “*takbīrat al-ihrām*”, where the performer recites the words “*Allāh Akbar*” while at the same time, raises his/her two hands upward to the same level of the shoulder, with the palms facing the *qiblah* (direction of the place to meet when performing *ṣalāh*). When these two palms face the *qiblah*, they try to gain back spiritual energy from the Ka'bah, which is the axis of world energy, as Muslims from all over the world direct their faces to it when they perform praying.⁵⁰ In addition, this pose also activates the “*anahata*” (heart) chakra, as raising two hands up to the level of the shoulder will “open the chest,”⁵¹ where the “*anahata*” (heart) chakra resides. After gaining this initial energy through the palms, prayer performers place their two hands, the right above the left one, on the stomach area, with three variations of center: either below the solar plexus, right at the solar-plexus, or above it. If this action is connected to chakra, the spiritual energy (*prana*), infused into the hands through the palms, activates the “*swadishtana/tantian-sex*” chakra (below the solar plexus), or the “*manipuraha/solar-plexus*” chakra (right at the solar plexus), or “*anahata/heart*” chakra (above the solar plexus).

The activation of one of the three chakras will be followed by the activation of the other two chakras, *Muladhara* and *Sahasrara*, as the blood is distributed to the parts of the head and tail-bone (when the backbone is straight),⁵² when the performer of the prayer takes the pose of *ruku'* (bowing), where the position of the body makes the form of a 90-degree angle, with the two palms placed on the knees, and the backbone is straight. In this position, apart from activating the two major chakras (*Muladhara* and *Sahasrara*), the other two minor chakras in the knees also become

⁴⁹ Parita, “What Is a Chakra?”

⁵⁰ Mustofa, *Pusaran Energi Ka'bah*, 48.

⁵¹ Madyo and Sagiran, *Mukjizat Gerakan Shalat*, 43

⁵² Parita, “What Is a Chakra?”

active with the help of the placement of two palms, which have gained *prana* on them. Still, in this position, the minor chakras in the foot become active, as the meridian points of acupuncture in the foot is activated.⁵³ So far, then, there are three essential chakras, and two minor chakras have become active: either swadishtana or manipuraha or anahata chakra, muladhara and sahasrara chakras, and minor chakras in the knees and foot.

The next pose is standing straightly in balance (*i'tidal*). In this position, the energies that have resonated with the activation of three significant chakras and two minor chakras are given a chance to vibrate around the chakra areas, as the blood that has been distributed to the head will be distributed back down to the parts of the body.⁵⁴ Up to now, there are still four important chakras that have not relatively become active: both swadishtana and/or manipuraha, and/or anahata chakras (by the following per under with the placement of hands after "*takbīrat al-ihrām*"), visudhi chakra, agna/ajna chakra. To activate these four chakras, another pose is needed. This is what is offered by the "prostrate" (*sujūd*) pose, where all major chakras become active, starting from the base-line chakra (muladhara), stepping upward to swadishtana, manipuraha, and anahata chakras (as the blood pressure will as well open-up the blockage in the heart),⁵⁵ and activating two other up-line chakras that have been still dormant formerly (visudhi and agna/ajna chakras), and finally, the top-peak crown chakra, sahasrara. In addition to this, with the help of the bloodstream, the "*sujūd*" pose also gives them time for minor chakras in the shoulder and hands to become active, apart from minor chakras that have become active before (knees and foot).

In this manner, from the position of "*takbīrat al-ihrām*" up to "*sujūd*" in the prayer, all the major chakras have become active with the actions, strengthened by words, that enables the flowing of bloodstream and energy (*prana*) throughout the body. So, the other poses onward, sitting between two *sujūds* (*iftirāsh*) or for "*tahīyyat*," are for maintaining, strengthening, and boosting the

⁵³ Syukur and Usman, *Terapi Hati*, 92-93.

⁵⁴ *Ibid.*, 41.

⁵⁵ *Ibid.*, 42.

chakras that have become active since this pose will further detoxicate negative energy in the body.⁵⁶ After the energies become stronger and stronger with the following *raka'at*, it is now time to share the power with others, with the "*salām*" movement, by shaking head to the right and left. The table of the poses of the prayer and the chakras activated is given below.

No	Chakra Activated	Prayer's Pose	Glands	Hormone(s)
1	Sahasrara (crown chakra)	<i>Ruku'</i> (bowing)	Pineal/Hypothalamus Gland	Melatonin
2	Agna (third-eye chakra)	<i>Sujūd</i> (prostrating)	Pituitary/hypophysis Gland	Growth hormone (GH), Adrenalin, Oxytocin, Antidiuretic Hormone (ADH).
3	Visudhi (throat chakra)	<i>Sujūd</i> (prostrating)	Thyroid Gland	Thyroid and parathyroid hormones
4	Anahata (heart chakra)	Standing-still after <i>takbīrat al-īhrām</i> , <i>Sujūd</i> (prostrating)	Thymus Gland	Thymus hormone (immune system).
5	Manipuraha (solar-plexus chakra)	Standing-still after <i>takbīrat al-īhrām</i> , <i>Sujūd</i> (prostrating)	Pancreas Gland	Serotonin (digestion), insulin (pancreas), dopamine (kidney), adrenalin
6	Swadishtana (sex/tantian chakra)	Standing-still after <i>takbīrat al-īhrām</i> , <i>Sujūd</i> (prostrating)	Ovary and Testis	Reproductive hormones (testosterone, estrogen, progesterone)
7	Muladhara	<i>Ruku'</i> (bowing)	Tail-bone/base-line	Relaxing

In this regard, if we list the sum-up of the prayer that generates the chakra activation that, in turn, has an impact on the

⁵⁶ Madyo and Sagiran, *Mukjizat Gerakan Shalat*.

endocrine system, together with the biological and psychological effects, the complete table is then given below.

No	Chakra Activated	Prayer's Pose	Glands	Hormone(s)	Biological Function	Psychological Function
1	Sahasrara (crown chakra)	<i>Ruku'</i> (bowing)	Pineal/ Hypothalamus Gland	Melatonin	Biological clock; Overall health and brain activity	Spiritual Growth
2	Agna (third-eye chakra)	<i>Sujūd</i> (prostrating)	Pituitary/ hypophysis Gland	Growth hormone (GH), Adrenalin, oxytocin, antidiuretic Hormone (ADH).	Menstrual Cycle, Osmoregulation, Growth and Division, Birth Contraction, Milk Production,	Balancing all glands, Intuition/ sixth sense
3	Visudhi (throat chakra)	<i>Sujūd</i> (prostrating)	Thyroid Gland	Thyroid and parathyroid hormones	Metabolic Rate	Emotional Balance
4	Anahata (heart chakra)	Standing-still after <i>takbirat al-ihram</i> , <i>Sujūd</i> (prostrating)	Thymus Gland	Thymus hormone (immune system).	Immunity	Fight or Flight, Anti-stress
5	Manipuraha (solar-plexus chakra)	Standing-still after <i>takbirat al-ihram</i> , <i>Sujūd</i> (prostrating)	Pancreas Gland	Serotonin (digestion), insulin (pancreas), dopamine (kidney), adrenalin	Blood Sugar Level, Healthy digestive system	Confidence, productivity
6	Swadishtana (sex/tantian chakra)	Standing-still after <i>takbirat al-ihram</i> , <i>Sujūd</i> (prostrating)	Ovary and Testis	Reproductive hormones (testosterone, estrogen, progesterone)	Menstrual Cycle, Male Characteristic	Positive Vibes, Stability
7	Muladhara	<i>Ruku'</i> (bowing)	Tail-bone/base-line	Relaxing	(Birth) Contraction	Stamina, grounding standpoint

Conclusion

It can be concluded from the above discussion that human metabolism is controlled by hormones, which are connected to certain glands of the human body that target particular organs. Interestingly, these glands can be stimulated by activating specific subtle energy centers, chakras (wheels). When the chakras are activated, they will trigger the glands to produce hormones intended, which in turn, human metabolism will function

properly, both biologically and psychologically. Prayer then, in this regard, plays an exceeding role, since the prayer, when it is performed correctly—actions that are strengthened with the words are conducted with patience-tranquility (*tuma'nīmah*) and concentration (*khushu'*)—it enables to activate of the "wheels" (chakras) of energy in the body, with the help of the flowing of the bloodstream and *prana* (energy). In this light, prayer may illustrate how the "spiritual biology" works when the power of body-mind-soul operates in line and harmony.

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