Adopting an Appropriate Ayurvedic Exercise Program

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Abstract

This paper articulates Ayurvedic views on exercise. This paper also explores the Ayurvedic herb withania somnifera or ashwagandha and exercise, looks at assessing one’s unique constitution in terms of adopting an exercise regimen, and then one’s predisposition for high blood pressure.

*Keywords:* ayurveda, exercise, herbs, running, biopsychosocial, biopsychospiritual, dosha, pakruti*,* withania somnifera,ashwagandha, hypertension, high blood pressure, EBM, evidence based medicine

Ayu comes from the Sanskrit for life and Veda comes from the Sanskrit for knowledge or science and Science of Life is the translation of Ayurveda (Natural Medicine, 2015; Patwardhan & Vaidya, 2009). Ayurveda originates from the Vedas as a holistic system focusing on diet, sleep and “management of sexual practice” (Ninivaggi, 2010, p. 189), considered its three pillars. Health results from the balance of three *doshas,* and disease from their imbalances. Ninivaggi (2010) defines *dosha* as “a fundamental bioenergetics principle and substance that regulates homeostasis in biological organisms; *doshas,* by nature, are dynamic and protective, and constantly become vitiated or stressed; there are three: (1) *Vata*, (2) *Pitta*, and (3) *Kapha*” (p.288). Their interaction helps determine one’s *Prakruti* (Fave, Negri, Manohar, Morandi and Bassi, 2015; Mahalle, Kulkarni, Pendse and Naik, 2012). Ninivaggi (2010) defines *prakruti* as “the individual body type or constitution of a person; the structural and functional expression of the individual’s genetic code” (p. 298). Ayurveda also involves herbs, meditation, yoga, massage and exercise or *Vyayama* (Ninivaggi, 2010, p. 312), for a biopsychosocial or biopsychospiritual level of optimal health suggested by lifestyle and behavior.

This paper focuses on adopting an appropriate exercise regimen from the Ayurvedic perspective. It looks at *Withania somnifera* (a*shwagandha*), an important Ayurvedic herb, determining one’s unique constitution, determining one’s predisposition for high blood pressure, and includes my own unique experience with each of these. This paper concludes with an emphasis on the biopsychosocial or biopscyhospiritual approach to not only exercise but to health and wellness at large that Ayurveda embraces and encourages.

**Adopting an Appropriate Exercise Regimen**

According to Ninivaggi (2010), *Doshas* regulate the body’s biological clock and the time of maximum activity of the *Kapha* *Dosha,* which Ninivaggi (2010) defines as “the bioenergetic Water *dosha*; whose main function is that of providing cohesion, binding, and containment” (p. 291), is during early morning and early evening. The *Pitta*, or “the Fire *dosha*…[has the] main function…of transformation, penetrating heat production, and digestion” (p. 297) and its period is during midday and midnight. The *Vata* *Dosha* is “the *Dosha* of Air…[and its] main function is that of propulsion and movement” (p. 310) and its hours are dawn and dusk. These classifications reflect the individual life cycle, where *Kapha* rules the early childhood years, *Pitta* governs from puberty to middle age, and *Vata* is predominant in later years. This influences how one should exercise because from the Ayurvedic perspective, exercise should be appropriate for one’s own constitution, or *Prakruti* (Lad, 2002, p. 279)*.* Ninivaggi (2010) defined *Prakruti* as “the individual body type or constitution of a person; the structural and functional expression of the individual’s genetic code” (p. 298). Lad (2002) suggested, “*Kapha* individuals should perform the most strenuous exercise, *Pitta* a medium amount and *Vata* a small amount of gentle exercise” (p. 279). Lad (2002) also suggested that walking, swimming, and yoga are probably the best types of exercise for any constitution and that “adequate exercise stimulates the gastric fire, improves digestion, relieves constipation, and induces relaxation and sound sleep” (p. 279). According to Lad (2002), disorders of *Kapha* include “generative arthritis and rheumatoid arthritis. Excessive jogging can be stressful to the joint. Vigorous exercise can change the quality of *Kapha* and hurt the joint and as a result, as a person ages, they may develop arthritis. So, it is recommended that the best forms of exercise for *Kapha* are yoga, aerobic water exercises, Tai Chi, brisk walking, and swimming” (p. 279).

From this Ayurvedic perspective, exercise is for circulation and is important each day because sweating exercise detoxifies the system. A person should exercise to half his capacity, “just until sweat comes to the forehead, under the armpits and along the vertebral column” (Ladd, 2002, p. 77). The length of time will vary according to the individual and will increase as strength is built. This type of exercise using only half energy is “necessary for the maintenance of physiological functions of vital organs, such as the heart, liver, kidneys, and lungs. Vigorous exercise beyond this capacity may lead to dehydration and could cause constipation” (Ladd, 2002, p. 78). To avoid the joint stress and possible resultant arthritis, when exercising one should watch for profuse sweating, breathing difficulty, or a need to breathe through the mouth and tightness in chest area, using these symptoms as an indication to slow down or stop (Lad, 2002, pp. 77-78).

**Withania Somnifera or Ashwagandha**

The therapeutic affect of *Withania Somnifera* or *Ashwagandha* in terms of exercise has been well documented. For example, Wankhede, Langade, Joshi, Sinha, and Bhattacharyya’s (2015) study examined *Ashwagandha* intake and its effect on both muscle mass and strength in resistance training and confirmed the properties of this Ayurvedic herb, suggesting that it might be advantageous with a strength training regimen. Shenoy, Chaskar, Sandhu, and Paadhi’s study (2012), analyzed this herb’s effectiveness in improving performance in experienced cyclists by helping to provide the necessary fuel for endurance events. Their study documented the improvements in aerobic exercise in regards to endurance of athletes, supporting *Ashwagandha* as an important herb in tandem with an endurance exercise regimen. Raut et al. (2012) did a study to evaluate the effects of this herb on biochemical and physiological functions as well as assessing the safety of this herb traditionally used for enhancing strength and evaluated the effects on both biochemical and physiological functions. A secondary objective was to evaluate its effects on “body fat%, lean body weight, muscle strength, and exercise tolerance” (p. 111) and whether the herb contributed to “muscle strengthening, lipid lowering, and improved quality of sleep” (p. 114). Sandhu et al. (2010), found *Withania Somnifera* or *Ashwagandha* improved speed and muscular strength as well as neuro-muscular coordination. Mishra, Singh, and Dagenais’s (2000) paper reviewed the literature and found this herb to possess important properties for endurance athletes. These same researchers found this herb also influences several body systems like the nervous, cardiopulmonary and endocrine systems even though how it does this is not yet completely understood. The toxicity research shows this herb to be safe, while exhibiting several therapeutic benefits (Mishra, Singh and Dagenais, 2000, p. 334).

**Determining One’s Unique Constitution**

According to Ninivaggi (2010), there is a point where the body’s energy flow, circulation, flexibility and tone are optimal. This comes from exercising at a certain intensity depending on the athlete’s constitution. This is called *ardhashakti* and includes significantly increased heart rate, respiration, and temperature. Ninivaggi (2010) defined *Ardhashakti* as a “point in time after the initiation of exercise at which metabolic rate is increased as reflected in increased sweating, temperature, heart rate, pulse, and respiration; generally about 20 minutes; [and] reflects an individual’s *Mamsa bala* (muscle strength) and *Agni bala* (strength of metabolic functioning)” (p. 282).Sweating in this sense refers to the excessive perspiration that results in large amounts of sweat coming from the head. Normal perspiration such as occurs in sweating under the armpits and a little on the back is expected. Each constitutional type (*prakruti*) responds to a different mode of physical exercise. *Vata* is increased by motion, especially produced by cardiovascular training such as treadmill work and running, and by the use of other exercise machines. In addition to individual motions, health clubs members are also exposed to the bobbing up and down and sometimes-frenetic movement of those around and such a visual input can exacerbate an already overly stimulated *Vata*.

Excessive, not moderate, exercise predisposes to high *Vata*, which, in turn, causes mental agitation (anxiety, poor attention, lack of focus and moodiness). The popularity of health clubs and gyms makes careful attention to one’s choice of physical activity an important lifestyle consideration. Martial arts training is beneficial self-discipline, impulse control, and respect for one’s partner and is a good choice for children and adolescents, especially when adults emphasize the negative impact of violence and the proper regulation of aggression from an interpersonal and a social perspective.

*Ritucharya* or seasonal routines include dietary choices and activity recommendations proper to the season. Ninivaggi (2010) defined *Ritucharya* as “lifestyle regimen adjusted according to the specific season in order to maintain proper doshic balance” (p. 301). In general, the best time to engage in active exercise is the *Visarga* period in fall and winter. One’s strength is optimal at this time. In addition, one’s diet should be relatively greater in quantity since all foods at this time are believed to be imbued with greater energetic and nutritional components. For Ninivaggi (2010), the *Adana Kala* periodin spring and summer is “the hot and dry time of the year; generally summer in the United States” (p. 279), a time for less exercise and less food intake. This period is considered to be one of diminished overall energy and strength and should be used for greater rest and activities that require less physical exertion.

Ninivaggi (2010) defines *Sadvruth* or *Sadvritta* as “ethical regimens that guide daily living” (p. 301) and these include recommendations for the examination and the refinement of one’s values and behavior, especially interpersonal and social aspects. Emphasis on this reflects the importance that Ayurveda gives to areas of one’s life extending beyond those pertaining only to the single individual and to the care of the material body. This is part of the biopsychospiritual approach.

Ninvaggi (2010) defines *Sattva* as “one of three *Maha gunas*; the highly rarefied principle of consciousness, intelligence, harmony, equilibrium, optimal balance, clarity, purity, luminosity, and lightness” (p. 303). These same qualities in thought, feeling, and action are directions considered valuable to strive toward, embrace, and attempt to achieve. These include self-discipline, proper management of the five sensory faculties, impulse control, regulation of desire, avoidance of harm to self and others, honesty, truthfulness, and working to achieve health in body, mind, and consciousness. Ninivaggi (201) defined *Maha gunas* as “*Sattvam, Rajas,* and Tamas; these are the three fundamental, highly rarefied potentials with *Prakriti* (created nature) whose magnitude in any substance determines its specific nature, tendencies, and actions; some combination of Maha gunas are present in all dimensions of human life ranging from the biological through the psychological to the spiritual” (p. 293). All endeavors, therefore, that aims at enhancing refined consciousness are considered valuable, meritorious, and in the service of producing physical excellence (pp. 186-188).

Ninivaggi (2010) believed that “lifestyle regimens generally address what are considered to be Ayurveda’s “three pillars of life”: (1) food, (2) sleep, and (3) the management of sexual activity. These represent fundamental and biological needs. Exercise as well as determining the athlete’s constitution is necessary to help determine the specific needs of an athlete and then how to both meet and address these needs. Such derive from an understanding of *Prakruti*. Ninivaggi (201) defines *Prakruti* as “the individual body type or constitution of a person; the structural and functional expression of the individual’s genetic code” (p. 298) as it operates within a particular environmental context. The three primary doshic types; *Vata*, (“the bioenergetic *dosha* of *Air;* …whose main function is that of propulsion and movement” p. 310), *Pitta*, (“the bioenergetic Fire dosha; …whose main function is that of transformation, penetrating heat production, and digestion.” p. 297) and *Kapha* (“the bioenergetic Water *dosha*; …whose main function is that of providing cohesion, binding, and containment” p. 291) serve as directions to both customize and appropriately combine to arrive at appropriate mixed constitutional types and since there are as many different *prakruti* types as there are people in the world, these initial recommendations are to be considered but rough blueprints requiring ongoing individualized adaptation to changing conditions. These changes are all part of the “stage of life cycle, season, [and] particular stressors at a given time” (Ninivaggi, 2010, p. 189).

**Determining One’s Predisposition for High Blood Pressure**

Tripathi, Patwardhan and Singh (2010) saw the three Doshas, Vata, Pitta, and Kapha, as quantum mechanisms responsible for our homeostasis. Ayurveda classifies human beings into constitutional types or *Prakriti*, which Ninvaggi (2010) defined as “primordial nature or matter that is initially undifferentiated but then gradually organizes to become energetic and manifest as a multiplicity of substances composed of energy and matter” (p. 298). The dominance of any one or combined *Doshas* where there is a genetic, biochemical or hematological bases determines and makes up one’s *Prakriti*.

Previous studies have proposed some important genetic, biochemical and hematological bases for Prakriti. Tripathi, Patwardhan and Singh (2010) conducted their study with volunteers having dual constitutional types (Dvandvaja Prakriti) to evaluate the variability of both heart rate and blood pressure in response to exercise and found these cardiovascular responses not varying significantly as per these dual constitutional types. There was a significant fall in the diastolic blood pressure immediately after performing the isotonic exercise for five minutes, in Vata-Kapha individuals in comparison to the other two groups, namely, Pitta-Kapha and Vata-Pitta.

This study is helpful in determining an exercise regimen because it shows that the questionnaire Tripathi, Patwardhan and Singh (2010) used to determine the dominance of Dosha is reliable and their study can also be viewed as a next step in dual constitutional research. Ayurvedic studies on predisposition to High Blood Pressure involve determining the dominance of Dosha as well as one’s *Pakriti.*

**My Experience**

From what I have read and thought about, I believe that my own *dosha* is that of *Kapha,* with cohesion, binding and containment as appropriate attributes. I think that my own *Kapha*-dominant constitution goes best with vigorous exercise and my own marathon training. I also enjoy cardiovascular training as well as weight training though I have a predisposition for high blood pressure. I have no experience with *Withania somnifera* (a*shwagandha*) but would be interested in seeing how it could positively affect my marathon training and endurance.

**Conclusion**

In adopting an appropriate exercise regimen from the Ayurvedic perspective *Withania somnifera* (a*shwagandha*) is beneficial. Determining one’s unique constitution and one’s predisposition for high blood pressure are key to determining an appropriate exercise regimen. I’m looking forward to experiencing this Ayurvedic herb in my training and to continue my own exercise regimen with these insights, particularly in terms of my own predisposition for high blood pressure. The biopsychosocial or biopscyhospiritual approach to exercise and health that Ayurveda embraces allows for a much broader exercise and training experience.

When it comes to this biopsychospiritual approach in Ayurveda, adopting an exercise regimen should also incorporate *Pranayama* or breathing exercises with either yoga or other aerobic activities, like running, along with *Sadvrutta*. *Sadvrutta* by itself would not complete this biopsychospiritual model. What is important here is that particularly in a physical regimen, if we are using an appropriate Ayurvedic biopsychospiritual model, then we need to incorporate both *pranayama* and meditation as part of the mental training and increasing its endurance along with physical endurance. Running is a focused form of breathing and meditation A. Ramasubramian (personal communication, February 7, 2016).

*Withania somnifera* (a*shwagandha*) is beneficial of the athlete’s recovery. Duration and types of exercise should be matched with the athlete’s unique constitution. Exercise adopted with these considerations can effectively lower blood pressure. The Ayurvedic perspective embraces a biopsychosocial or biopscyhospiritual approach that allows for a much richer exercise experience and future research might be done specifically with marathoners and endurance athletes using this biopsychosocial or biopsychospritiual approach. *Sadvruth* is an important part of this biopsychosocial approach to health and helps to both understand and practice in a holistic environment while determining an appropriate exercise regimen.

There is a healthy Western skepticism of Ayurvedic evidence based results. Future research might be done combining both the tradition of Ayurveda and the evidence based scientific perimeters that the West uses to both evaluate and explain science. According to Singh (2010), “there is a need to develop new appropriate research methodology for Ayurvedic research through intense interface between Ayurveda and conventional science” (p. 66) and according to Fave et al., (2015),

the repeated claims for a biopsychosocial approach to health, and the recent acquisitions in physics and epigenetics support the crucial role of the dynamic interaction with the environment in shaping the structure of any system – be it an individual, a community, or a culture. A constructive exchange and integration of views with other knowledge and medical traditions can represent a substantial step toward the achievement of this goal (p. 405).

References

Fave, A. D., Negri, L., Manohar, P. R., Morandi, A., & Bassi, M. (2015). The Ayurveda concept of *Prakrti* and the Western construct of personality: A comparative pilot study. *European Journal of Integrative Medicine* *7*, 396–408.

Frawley, D. (1977). *Ayurveda and the mind: The healing of consciousness*. Twin Lakes, WI: Lotus Press.

Frawley, D. (1999). *Yoga and Ayurveda: Self-healing and self-realization*. Twin Lakes, WI: Lotus Press.

Lad, V. (1985). *Ayurveda: The science of self healing: A practical guide*. Twin Lakes, WI: Lotus Press.

Lad, V. (2002). *Textbook of Ayurveda, Vol. 1: Fundamental principles*. Albuquerque, NM: The Ayurvedic Press.

Mahalle, N. P., Kulkarni, M. V., Pendse, N. M., & Naik, S. S. (2012). Association of constitutional type of Ayurveda with cardiovascular risk factors, inflammatory markers and insulin resistance. *Journal of Ayurveda and Integrative Medicine*, *3*(3), 150–157. http://doi.org/10.4103/0975-9476.100186

Mishra, L. C., Singh, B. B., & Dagenais, S. (2000). Scientific basis for the therapeutic use of *withania somnifera* (Ashwagandha): A review. *Alternative Medicine Review**5*(4). 334-346.

Natural Medicines (2015). *Ayurveda*. [Webpage]. Retrieved from https://naturalmedicines-therapeuticresearch-com.ezproxy.humanisticpsychology.org/databases/food,-herbs-supplements/professional.aspx?productid=1201

Ninivaggi, F. J. (2010). *Ayurveda: A comprehensive guide to traditional Indian medicine for the West*. Westport, CT: Praeger.

Patwardhan, B. & Ashok D.B. Vaidya, A. D. B. (2009). Ayurveda: scientific research and publications. *Current Science 97*(8). 1117-1121.

Raut, A. A., Rege, N. N., Tadvi, F. M., Solanki, P. V., Kene, K. R., Shirolkar, S. G., … Vaidya, A. B. (2012). Exploratory study to evaluate tolerability, safety, and activity of *Ashwagandha* (*Withania somnifera*) in healthy volunteers. *Journal of Ayurveda and Integrative Medicine*, *3*(3), 111–114. http://doi.org/10.4103/0975-9476.100168

Sandhu, J. S., Shah, B., Shenoy, S., Chauhan, S., Lavekar, G. S., & Padhi, M. M. (2010). Effects of *Withania somnifera* (Ashwagandha) and *Terminalia arjuna* (Arjuna) on physical performance and cardiorespiratory endurance in healthy young adults. *International Journal of Ayurveda Research*, *1*(3), 144–149. http://doi.org/10.4103/0974-7788.72485

Shenoy, S., Chaskar, U., Sandhu, J. S., & Paadhi, M. M. (2012). Effects of eight-week supplementation of *Ashwagandha* on cardiorespiratory endurance in elite Indian cyclists. *Journal of Ayurveda and Integrative Medicine*, *3*(4), 209–214. http://doi.org/10.4103/0975-9476.104444

Singh, R. H. (2010). Exploring larger evidence-base for contemporary Ayurveda. *International Journal of Ayurveda Research*, *1*(2), 65–66. http://doi.org/10.4103/0974-7788.64394

Sivananda, S. (2005). *Kiundalini yoga.* Shivamamdamgar, Uttarancha; Yoga-Vedanta Forest Academy Press.

Tripathi, P. K., Patwardhan, K., & Singh, G. (2010). The Basic cardiovascular responses to postural changes, exercise, and cold pressor test: Do they vary in accordance with the dual constitutional types of Ayurveda?  *Evidence-Based Complementary and Alternative Medicine* *2011*, 1-10. doi:10.1155/2011/251850

Wankhede, S., Langade, D., Joshi, K., Sinha, S. R., & Bhattacharyya, S. (2015). Examining the effect of *Withania somnifera* supplementation on muscle strength and recovery: a randomized controlled trial. *Journal of the International Society of Sports Nutrition*, *12*, 43. http://doi.org/10.1186/s12970-015-0104-9