

**Surviving Stress: A Study of Professional Women's Stress Levels,
Their Genetic Resiliency, and Herbal Adaptogens as an Effective
Intervention**

by

Lynda K. Wilson-Hare

DISSERTATION.COM



Boca Raton

Surviving Stress: A Study of Professional Women's Stress Levels, Their Genetic Resiliency, and Herbal Adaptogens as an Effective Intervention

Copyright © 2007 Lynda K. Wilson-Hare
All rights reserved.

Dissertation.com
Boca Raton, Florida
USA • 2007

ISBN: 1-58112-364-7
13-ISBN: 978-1-58112-364-7

ABSTRACT*A Study of Professional Women's Stress Levels, their Genetic Resiliency, and Herbal Adaptogens as an Effective Intervention*

A study of professional women was initiated to determine if herbal adaptogens have any effect on improving resiliency for coping with stress. An herbal adaptogen is an herb that helps the body adjust to difficult or extreme circumstances (Derrida, 2004). An iridology assessment was completed to define the subjects' genetic profile for resiliency. It was hypothesized that if the person were genetically resilient, herbal adaptogens would not be effective as their stress handling capabilities were naturally strong. Through resiliency questionnaires a positive improvement in the ability to manage stress was noted in eleven out of twelve subjects post herbal intake. This research suggested that our ability to recover from stress is not totally related to our genetic properties, and can be enhanced with herbal supplements.

ACKNOWLEDGEMENTS

I would like to thank my sister Debbie and friends for their genuine interest and excitement in my research topic. Their enthusiasm was essential at keeping me focused and feeling like I have been doing something of value. The loving support of my husband through this journey of life long learning has allowed me to dedicate time and energy to fulfill my dream. His patience and thoughtfulness with special dinners, and unexpected roses has allowed this experience to be reflected without missing quality time and special memories. I would especially like to dedicate this research to the memory of my amazing mother, who taught me the fascination and respect for nature.

TABLE OF CONTENTS

	Page
ABSTRACT.....	ii
ACKNOWLEDGEMENT	iii
CHAPTER 1 INTRODUCTION TO THE PROBLEM OR ISSUE.....	1
History and Background	3
Research Questions.....	5
Significance of Study	5
Definition of Terms	6
CHAPTER 2 REVIEW OF RELATED LITERATURE AND RESEARCH.....	8
Resiliency.....	8
Professional Women Subjects.....	10
Iridology.....	11
Herbal Adaptogens.....	14
CHAPTER 3 DESIGN OF STUDY.....	17
Research Type	17
Method	17
Participants.....	17
Data Collection.....	17
Techniques for Analyzing Data.....	17
Researcher's Qualifications.....	18
Selection of Subjects / Recruitment.....	19
Potential Benefits and Risks.....	20
Limitations	21

CHAPTER 4 RESULTS AND FINDINGS.....	22
Results	22
Findings.....	31
CHAPTER 5 CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH	34
Conclusion.....	34
Implications.....	37
Further Research	37
REFERENCES	39
APPENDIX	42
A Questionnaire Essi Stress Resilency.....	43
B Iridology Assessment Form.....	55
C Information on Astragalus.....	58
D Researcher’s Curriculum Vitae.....	59
E Invitation to Participate in Study.....	64
F Selection Criteria Checklist.....	65
G Informed Consent Form.....	66
H IRB Form.....	67

CHAPTER 1 INTRODUCTION TO THE PROBLEM OR ISSUE

This study explored how professional women perceived their current stress levels. After setting a base level for how they responded within 21 various measurements of stress factors, the study then proceeded to see if the subjects' responses were related to their genetic profile. A person with tight fiber consistency within the iris of the eye demonstrates a high capability to cope with stress. If a person has a genetic advantage to handling stress it is possible that their perceived stress levels would demonstrate scores in the higher level of optimal resiliency. In investigating this coping ability, the study also explored if herbal adaptogens have any effect on reducing the subjects' perceived stress levels by enhancing resiliency. High resiliency performance requires a combined set of strategies, mindsets, competencies and mechanisms for health. The study will demonstrate if an herbal adaptogen can influence our health by changing these perceptions.

The term "stress" comes originally from the field of physics, where it refers to any strain, pressure or force applied to a system. Dr. Hans Selye, a well-known Physiologist noted that individuals suffering from a wide range of physical ailments all seemed to have a constellation of common symptoms. These included loss of appetite, decreased muscular strength, elevated blood pressure and loss of ambition to accomplish anything (Everly & Rosenfeld, 1983). Selye also observed that when stress becomes chronic or excessive, the body mirrors this and is unable to adapt and cope. However, he observed that some people can find stress an exciting challenge and a necessary motivation to do one's best (Benson & Stuart, 1992). As a result, stress includes two specific elements, "distress" refers to negative stress or when the body becomes unable to

adapt and exacts a toll on the body and mind. “Eustress” is positive stress that is high motivation and improves the quality of life. The goal for optimal stress levels, good health and performance, is to have a good combination of both eustress and distress. Resiliency is the balance between too much and too little. It is different for each person. It is the state of using about eighty five percent of one’s own capacity, eighty five percent of the time. This allows for reserves, giving added pushes when needed (Essi Systems, 2006).

The effect of stress on our bodies has three routes of impact. The physical body reacts to stress in the way of non-verbal actions such as muscle cramps, headaches, and sweaty palms. The mind impact includes - thoughts, opinions, judgements, beliefs and belief systems a person has that influences the way they behave. Emotions or feelings experienced lead to the way one reacts to people, places and events that influence our decisions (Essi Systems, 2006).

The reaction to stress is known as the “fight or flight” response. When exposed to a threat of danger or harm the body instantaneously mobilizes for action. After the threat has passed, the body rebounds, renewing it to function normally. Optimal performance or resiliency is our ability to bounce back to normal functioning quickly. In today’s environment fight or flight is not an option and an evolved term of freeze has been added to the response. Freeze is the equivalent of taking a deep breath and holding it. It is a setup for severe wear and tear and other physiological or emotional damage (Essi Systems, 2006). Significant positive changes in stress coping can be achieved if a person is able to recognize when they are in freeze mode and moves to recovery quickly.

If herbal adaptogens are effective at decreasing the time to move from one stage to the other, resiliency modifications will be easier than relying on self awareness and changes in behaviour.

History & Background

Iridology is the analysis of patterns and structures in the iris, the coloured part of the eye. The iris is made up of connective tissue, containing approximately 28,000 nerve endings, all of which are connected to the brain. In this way, the brain receives continual information regarding organ function and records these messages in iris markings. These genetic markings, passed from parent to child, give an overall blueprint of the constitution (Spence, 2005). These markings determine the person's strengths and weaknesses in body tissue. The weaknesses show as manifested disease; or the potential for disease in the future; or disease to be passed to other generations. Becoming personally aware of these factors allows the people to help themselves. Iridology is the "movement from disease towards health" (Spence, 2005). Iridology reveals how well your body functions. Hippocrates said: "Behold the eye, behold the body." The eye is the gateway to the body (Iridology, 2002). Iridology is not a new science. Hippocrates and Phulostatus used Iridology, and records of iris markings were painted on stone slabs left by the Babylonians in 1000 BC. Since the seventeenth century extensive research and records have been kept.

The iris reflects a person's physical resiliency measured by the thickness and depth of the iris fibers. Tight, closely woven, deep appearing fibers demonstrate the person's ability to work hard, reduce physical stress, a decreased frequency of illness,

increased recuperative powers, and the ability to live longer with greater ease (Tart-Jenson, 1996). Resiliency in iridology terms reflects the abuse capacity of the body. The more dense and close the fibers the higher the indication of good structural integrity, meaning they can resist negative influences and compensate without much awareness of this occurring on the body. Very resilient individuals have few complaints. However, they may not feel many symptoms and be ill for a long time before they are aware of it (Smith, 2000).

A person's ability to handle stress may also be effected by the use of an herbal adaptogen. An herbal adaptogen is a botanical product that has unique properties to help one regain control of their life and their health. When stressed, the adrenal glands produce a hormone in excess called cortisol. Cortisol is highly toxic and attacks muscle mass, organs, and decreases strength. It enhances recovery time and reduces the ability to focus. It also diminishes the immune system. Adaptogenic herbs protect the body from excess cortisol. The adaptogens act to restore hypothalamic and peripheral receptor sensitivity to the effects of cortisol and other adrenal hormones. The adaptogens enable the body to mount an appropriate stress response with lower amounts of cortisol than would otherwise be required. In addition, adaptogens help the adrenals return to normal more quickly (Awang, 1996). Astragalus membranaceus is an herbal adaptogen. Specifically, astragalus is used to strengthen the defensive energy of the body. It has the ability to strengthen the natural defenses of the body and prevent disease involving the immune system, the cardiovascular system and glands from all other systems (Mowrey, 1993). Astragalus is the most famous within traditional Chinese medicine. According

to the Chinese, it strengthens the digestion and the body's vital energy called the Qi (McIntyre, 1988).

Research Questions

- Is there a relationship between a woman's perceived resiliency or hardiness to stress and her genetic capabilities?
- If a woman is resilient, genetically speaking, do herbal adaptogens have an effect on her coping?
- If a woman is not resilient do herbal adaptogens allow her to become better at managing stress?

Significance of the Study

This study examined a group of professional women and their ability to be resilient to stress. A self-assessment from Essi Systems determined how they bounce back after disappointments or failures. The questionnaire assessed how they were adaptable and incorporated life experiences into new ways of thinking or acting. Each woman had an iridology assessment to determine the genetic resiliency to stress based on iris fiber density. The genetic profile was compared to the self-assessment determining correlations between how stress is managed –perceived and genetically. It was anticipated that if the woman is genetically resilient the profile would reveal a highly resistive individual with strong coping capabilities. Resiliency was measured again after the subject had taken the herbal adaptogen assessing if there was any effect given the perceived and genetically determined results.

The study proposed to show that women with genetically resilient iridology profiles cope better with stress. Their resiliency was anticipated to be unaffected by the herbal adaptogen as they were functioning at their peak levels for coping with stressors. Genetically resilient individuals have developed hardiness, and are able to combat negative influence and can compensate without much awareness. However, women that are not genetically resilient to stress were not expected to perform as well on the self-assessment. It was suggested that they would benefit from an herbal adaptogen to boost their abilities, as the herb would improve their perception of situations creating resiliency. The study was to demonstrate whether people can benefit from herbal adaptogens, and if so, if the result had any relation to a person's genetic ability to be resilient. In addition this study measured whether a person's genetic ability to manage stress correlates with the perceived ability to manage stress.

Definition of Terms

Adaptogen ~ "a substance that helps the body adjust to difficult or extreme circumstances" (Derrida, 2004, p.1)

Balance ~ Resilience Scoring Grid – "effective and steady performance in most situations. This ranges from approximately the 15th to the 50th percentile relative to normal distributions" (Essi Systems, 2006, p. 3).

Burnout ~ Resiliency Scoring Grid – "severe difficulty, impaired functioning and the extreme distress. This is the bottom, or worst affecting 15 percent of individuals" (Essi Systems, 2006, p. 3).

Changes ~ “are major shifts from something known and familiar to something new and different” (Essi Systems, 2006, p. 36).

Iridology ~ “the study of the iris of the eye claims to determine a person’s genetic resiliency to stress by the iris density and shading” (Smith, 2000, p. 12)

Optimal ~ Resilience Scoring Grid – “highest level of effectiveness and creativity. This is normally the top or ‘best’ 15 percent of individuals” (Essi Systems, 2006, p. 3).

Pressures ~ “are the day-to-day, insidious strains and drains to which we must make accommodation of our resources and energy. They are on-going relationship, demands and situations that are perceived as difficult or draining” (Essi Systems, 2006, p. 36).

Resiliency ~ “1. the capability of a strained body or organism to recover its size and shape after deformation caused especially by compressive stress; 2. an ability to recover from or adjust easily to change or misfortune” (Essi Systems, 2004, p. 2)

Strain ~ Resiliency Scoring Grid – “often runs into difficulty, feels overwhelmed or drained. The distribution range is from approximately the 50th to the 85th percentile” (Essi Systems, 2006, p. 3).

Stress ~ “is the body’s normal response to anything that disturbs its natural physical, emotional, or mental balance” (Smith, 2005, p. 1)

CHAPTER 2 REVIEW OF RELATED LITERATURE AND RESEARCH

Faced with pressure, challenge or danger, the body reacts quickly to a stressor, and releases hormones such as cortisol and adrenaline to help us respond. In today's society it is no longer acceptable to fight or flee from a situation and this reaction leads to damage of health and affects the ability to cope effectively (British United Provident Association [BUPA], 2003). In our world of fast paced, highly competitive lifestyles, having options, clear or not is more difficult. As a result, the body adapts to another response mechanism to the fight, flight scene – freeze. The freeze mechanism is the emotional equivalent to taking a deep breath and holding it. Sometimes this freeze posture is taken for so long it is not realized. Hence accommodation, both cellularly and biochemically the exacerbated stress levels and stress hormones in the body for so long that the baseline becomes elevated – a set up for severe wear and tear and other damage to the physiologic and often times emotional constructs (Essi Systems, 2006). The key to handling stress is to shorten the amount of time between when noticing a state of fight or flight or freeze and responding to it. The sooner the response to the state the more quickly the body returns to its manageable state. This is referred to as enhancing resiliency.

Resiliency

Everyone is born with a renewable capability for resiliency – the built-in power to heal, regenerate, and grow beyond the last known limit. How well a person utilizes their resilient nature depends on many things; the number and types of changes or demands the body must manage at one time, attitudes and general beliefs about the world, and the

skills learned and mastered for dealing with the environment (Essi Systems, 2006). Essi Systems, 2006 defines resiliency as not simply the absence of illness or lack of manifest symptoms, but is a complex set of interactions between one's environment, one's skills, competencies, values and beliefs. The outcomes of such interactions will contribute or detract in some measurable way, from one's physical, emotional, and behavioural health. Mapping a person's resiliency is a process that identifies their personal profile. It allows for the identification of traits, factors and characteristics that are unique to the individual for strengths and vulnerabilities. It is a "snapshot" of the person at the time the test was taken. The questions are framed around the last month of experiences. The results of this map will change with time and as the person grows/changes.

The resiliency tool looks at six major areas and how they are related:

- 1) Environmental Demands – looks at the changes, pressures and stressors that are part of everyday work, personal and family worlds.
- 2) Environmental Assets – determines areas of satisfaction, benefit and support within both work and non-work settings.
- 3) Resilient Beliefs and Values – measures four thinking and feeling patterns that help or hinder the ability to build resilience.
- 4) Personal Coping Capabilities – explores five basic competencies that help to bolster resiliency and manage demands.
- 5) Social Coping Capabilities – covers three major areas of interpersonal support and connection.

- 6) Health & Functioning – describes the degree to which one is free from physical, behavioural, or emotional symptoms that reflect chronic difficulty in managing life and work demands

(Essi Systems, 2006).

Professional Women Subjects

In examining stress resiliency, the best subjects are women with full time careers, who manage their families, and are generally the primary care givers in their homes. In 1950 twelve percent of women with pre-school children worked, now sixty percent of such women are employed. As women have moved into paid employment there has been some increase in the home roles of husbands and fathers, however women still carry the larger workload at home (Crosby, 1988). As a result this makes women poorer candidates for physical and mental health arising out of work-family role conflict, role strain, and fatigue from overwork. In studies controlling for age, marital status and presence or absence of children found that women with multiple obligations (especially single mothers) do show poorer health than non-working, age-matched counterparts (Arber, Gilbert & Dale, 1985).

In a study by Trocki and Orioli (2001), they compared gender differences in the assessment of job stress in a changing workforce. The largest differences between men and women are pressure scales and emotional symptom scales. Women have more favourable scores than men on self care and support seeking, however they perceive more pressures and changes and have lower coping resources. For women, the number of hours worked predicted physical and behavioural symptoms (the more hours the more symptoms). Emotional symptoms however were predominately associated with being

younger and having children. Women show warmth and compassion to the family and friends, however when it comes to caring for themselves they tend to disregard their own stresses and needs, and over time become depleted and feel overwhelmed by their inner struggles and stress (Bright, 2002). When examining symptoms it was identified that women tend to be sick in response to work pressures first, family pressures second, which is the reverse for men. In an analysis of employed individuals in the Framingham Heart Study (Haynes & Feinleib, 1980) coronary heart symptoms were higher in women who had high job demands and low clarity from supervisors. It was noted the riskiest combination for women was to be married, have children and be in a clerical occupation.

Iridology

The iris of the eye highlights a person's health picture by revealing which areas of the body have enough energy to meet demands and which may need assistance. Iridology analysis is remarkable accurate because areas of stress send a signal through the nervous system leaving a telltale mark on the sensitive iris. The iris is an extension of the brain with forty percent of cranial nerves going in and out of the brain traverse the eye (Gay, 2002). The better the understanding of the constitutional makeup, there is improved the coping with the ever-changing external influences. The core iris patterns reveal information such as gifts and skills, principal personality traits, lessons to learn, deep fears, how to best learn and communicate, and strengths and weaknesses, all of which leads to greater self awareness. The positions and traits found in the iris determine where the deoxyribonucleic acid (DNA) will have the greatest effect.

Resiliency is measured through the fibrous integrity of the iris of the eye. This reveals the anatomic strength of an individual counteracting negative external influence such as external toxic materials, internal metabolic wastes or negative emotions, and accidents or traumas for example. It is a measurement of the abuse capacity of the body (Tart-Jenson, 1996). The greater the density (thickness and depth) in the iris fibers, the higher the resistance of the body to external influences (Marcia, 2005). Any deviance in structural integrity of the iris reveals inabilities of the body to function harmoniously.

Resilient iris fibers are:

- Tight
- Close together
- Richly deep appearing

Physical resiliency is about our genetic makeup and our inherited strengths. It is our ability to:

- Work hard
- Reduce physical stress
- Decrease frequency of illness
- Increase our recuperative powers when we do become ill
- Live longer with greater ease

(Smith, 2000)

In addition to physical resiliency there are other elements within iridology that promote the commitment and ambition of working hard to achieve success. The following iris characteristics are defined from Tart-Jenson, (1996):

Scurf Rim – Is a dark distinct ring in the outer area of the iris just inside the edge.

This is known as the ring of purpose, a feeling of special purpose or mission where the individual is constantly searching for mission in life with nebulous plans. They can have a fear of failure. With focus and diligent work dreams are manifested and they experience their own special life's purpose. If they lose focus they may become indecisive and stagnant (p. 53).

Neurogenic – Are tight, delicately arranged, thin stretched appearing iris fibers, alike fine silk. These individuals are balancers trying to be in the middle, balancing each side of the seesaw, bringing people together, and acting as the conduit of information. They are seen as the glue that holds the world together. Tight fibers provide them with resilient nature. In spite of the resiliency, which allows them to take care of people all the time, to bring people together, to be the mediator or diplomat, they may need to give it a rest before they get sick and take care of themselves (p. 73).

Contraction Furrows - are arcs spread throughout the iris caused by a buckling of fibers due to prolonged and excessive stress. These individuals often create lots of stress in their lives and feel victimized. They are inclined toward 'type A' behaviour and are often highly diversified, motivated and ambitious. They have many things going on at once and feel under a great deal of tension in life usually of a psychosomatic origin. Productive in drive and nature, being in a state of tension and wound up is a common feeling. They are inflexible. If this person takes this behaviour and goes in exactly the wrong direction for exactly the wrong length of time, they may experience a nervous breakdown. They need a lot of

support and reassurance. It is important that they take action on areas that need attention in their life so they can let go and relax (p. 79).

Extrovert – is a type A personality (p. 93).

In an iridology assessment this is identified when the collarette wreath is atonic, floppy, or distended (Tart-Jenson, 1996). An extrovert is defined as a person whose motive and actions are obvious, action oriented; they make friends readily, and adjust to social situations and surroundings easily (Answers.com, 2006).

Herbal Adaptogens

The primary natural approach to treating stress focuses on the use of herbal adaptogens. To be considered an herbal adaptogen, a herb must meet three criteria:

- The action of the adaptogen is nonspecific, increasing resistance to a wide range of adverse and diverse chemical, physical or biological nature.
- It must possess normalizing influence regardless of pathological changes, i.e. if blood pressure is too high it must lower it, and if it is too low raise it.
- The herb is harmless and does not cause significant disturbance to normal function (Brown, 2002).

Currently there are only five herbs classified as adaptogenic.

During a stressful situation, there is a disruption in the circadian rhythm of cortisol secretions, including a depletion of catecholamine neurotransmitters such as norepinephrine and dopamine. To successfully combat stress and stressful situations implies being able to rapidly reassume homeostasis once the stressor is withdrawn. For example, an athlete will be relatively unaffected by competing in an event as this was part of their training process. Introducing something new in the competition will

increase the athlete's stress level, however they will recover quickly based on their physiology. This is a non-specific resistance to stress gained by virtue of the training induced higher level of fitness. A sedentary individual participating in this competition would be very stressed and would not recover as quickly. An herbal adaptogen is analogous to the training an athlete undergoes to prepare for competition. Adaptogens cause our physiology to begin the adaptation process to stress. When a stressful situation occurs, the herbal supplement generates a degree of generalized adaptation (or non-specific resistance) that allows our physiology to handle the stressful situation in a more resourceful manner (Kelly, 2001).

Astragalus membranaceus (milk vetch, huang-qi) was first mentioned over 2,000 years ago in a Chinese medicinal text. It is one of the most powerful tonic roots in Chinese medicine. It affects the spleen and lung meridians. Astragalus has been used for the following improvements:

- It has been shown to stimulate the immune system, by triggering the immune cells to a heightened states of activity, enhances the production of immunoglobulins. It has certain inhibiting effects on molecular pathological changes caused by viruses, increases growth of plasma cells, stimulates synthesis of antibodies and builds up body defense.
- It enhances body energy by promoting metabolism of serum and liver proteins, growth of antibodies, increases white blood cells and thus increases resistance.

- Shown heart protecting qualities, including protection against oxidative or free radical damage and the inhibition of aging chemical lipid peroxide within the heart.
- It is a diuretic, detoxicating and reduces proteinuria.
- Invigorates the vital energy or “qi” or “chi”
- Treatment for shortness of breath, general weakness, diabetes, colds, flu and other immune problems, lack of appetite.

(Botanical Chi, 2004)

CHAPTER 3 DESIGN OF STUDY

Research Type

This project utilized Experimental Research as it included an intervention with pre and post-test measurements. The research assessed the conditions in the present situation (perceived stress levels, iridology findings) and the results after introducing an herbal adaptogen.

Method

Participants: 12 professional women were chosen to participate in the research.

Professional women were selected as working women in general, traditionally the primary care givers within a home that share more commonalities such as job, house work, family (children and, or pets), groceries – additional stressors over and above work stress.

Data Collection:

- 1). All subjects completed a questionnaire called the Resiliency Map by Essi Systems, (2004). This was completed and received before the program commenced (see Appendix A). This questionnaire provided a baseline assessment for the Subject's perceived level of stress prior to taking the herbal adaptogen.
- 2). All subjects had an iridology assessment with specific focus on the density of the fibers in the iris. Overall physical resiliency was measured by the density and depth of the fibers in categories of mild, moderate, resilient and very (see Appendix B). The principal investigator performed the iridology assessments and administered the Essi Resiliency questionnaires.