2013

The Professional Female Singer and Career Longevity: Reflections, Choices, and Challenges

Anne Elise Richie
THE FLORIDA STATE UNIVERSITY

COLLEGE OF MUSIC

THE PROFESSIONAL FEMALE SINGER AND CAREER LONGEVITY:

REFLECTIONS, CHOICES, AND CHALLENGES

By

ANNE ELISE RICHIE

A Treatise submitted to the
College of Music
in partial fulfillment of the
requirements for the degree of
Doctor of Music

Degree Awarded:
Spring Semester, 2013

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Anne Elise Richie defended this treatise on March 26, 2013.
The members of the supervisory committee were:

Wanda Brister Rachwal
Professor Directing Treatise

Charles E. Brewer
University Representative

Timothy Hoekman
Committee Member

David Okerlund
Committee Member

The Graduate School has verified and approved the above-named committee members, and certifies that the treatise has been approved in accordance with university requirements.
I dedicate this treatise to the memory of my grandparents, Eugene and Cecelia Wilczewski and John and Mildred Richie, who supported my earliest musical interests. The sweet tone of Grandpa Wilczewski’s violin still echos in my memory today, some thirty years later.

I am forever grateful to my great aunts Helen and Josephine Bonczek for their exuberant support of my singing career and the countless care packages they sent during my “starving artist” days in New York. I thank my brothers and sisters for all their love and encouragement. To my father, who has cheered me on throughout my education and my mother, who has inspired me through her performing and teaching career, I give my unending love and gratitude.
ACKNOWLEDGEMENTS

I am indebted to my committee chair Dr. Wanda Brister Rachwal who challenged me to overcome every hesitation and self-imposed hurdle on the journey to completing my doctoral degree. She graciously provided the mentoring I needed as an adult student continuing my education and as a professional female singer anticipating the next phase of her vocal evolution. By affording me the opportunity to observe her work with undergraduate, master’s and doctoral level singers, Dr. Brister has broadened and improved my teaching methods.

I thank my committee for sharing their unique expertise and encouraging the continuation of my musical endeavors. Special thanks go to Dr. Timothy Hoekman whose expert knowledge of diction and music collaboration helped elevate my recital performances to a new level. I feel very fortunate to have had an opportunity to attend Dr. Charles Brewer’s lectures. His breadth of knowledge in the field of music history and early music is truly remarkable. Special thanks go to David Okerlund, Director of the Graduate Vocal Pedagogy Program, who graciously joined my committee in the final stages of my degree program.

To my adult voice students Treesa Soud and John Kauffman I extend my sincere thanks for their recommendations as I began my treatise. I am especially grateful to John Szczesniak for his love and support which allowed me to focus all my energy on the writing process these last few months. I thank the research librarians at Dirac Science Library for their assistance with statistical analysis and Laura Gayle Green, Allen Music Library Head Librarian, for her assistance with software issues and documentation.

Lastly, I am forever indebted to the 100 women who made time to participate in this research. I appreciate their willingness to openly share the challenges and the choices they made which helped them achieve career longevity. This research has afforded me the opportunity to engage with many fascinating, charming, and generous women.
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#### GLOSSARY OF WOMEN’S HEALTH TERMINOLOGY

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Androgen</td>
<td>A group of hormones that promote the development and maintenance of male secondary sex characteristics and structures. They are produced in smaller quantities in women and are important in the synthesis of estrogen. They also play a role in sexual function, muscle mass and strength, bone density, distribution of fat tissue, energy, and psychological well-being. With women, the major androgens are produced in the ovaries and adrenal glands and include testosterone, androstenedione, and dehydroepiandrosterone (DHEA).</td>
</tr>
<tr>
<td>Bilateral oophorectomy</td>
<td>The surgical removal of both ovaries (and usually, fallopian tubes).</td>
</tr>
<tr>
<td>Bioidentical hormones</td>
<td>Hormones that are chemically identical to the hormones produced by a woman’s ovaries. Bioidentical hormone therapy can mean a medication that provides one or more of these hormones as the active ingredient. There are bioidentical hormone therapies that are government approved/regulated/quality controlled and others (e.g., custom-compounded) that are not; and, although it has been suggested that the latter are safer, they all carry the same risk. See also Custom-compounded hormones.</td>
</tr>
<tr>
<td>Body Mass Index (BMI)</td>
<td>A number calculated from a person’s weight and height that provides for most people a reliable indicator of body size. Used to screen for size categories that may lead to chronic health problems.</td>
</tr>
<tr>
<td>Complementary and alternative medicine (CAM)</td>
<td>A broad range of healing philosophies and approaches not typically used in conventional medicine. A therapy is called “complementary” when it is used in addition to conventional medicine, whereas it is called “alternative” when it is used instead of conventional treatment.</td>
</tr>
<tr>
<td>Custom-compounded hormones</td>
<td>Hormones therapies that are mixed for individuals from a prescription into formulations such as topical creams, gels, lotions, tablets, and suppositories. See also Bioidentical hormones.</td>
</tr>
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<table>
<thead>
<tr>
<th>Term</th>
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<tbody>
<tr>
<td><strong>Endometriosis</strong></td>
<td>A condition in which the same kind of tissue that lines the inside wall of the uterus (endometrium) grows outside the uterus (e.g., on the ovaries or bowel), often resulting in severe pelvic pain and infertility.</td>
</tr>
<tr>
<td><strong>Estrogen replacement therapy</strong></td>
<td>Term once used to describe estrogen therapy (ET) for menopause, now disallowed by government regulators. See also Estrogen therapy (ET).</td>
</tr>
<tr>
<td><strong>Estrogen</strong></td>
<td>A variety of hormonal chemical compounds produced by the ovaries, influencing the growth and health of female reproductive organs. They are active in many cells throughout the body by interacting with estrogen receptors. The three main naturally occurring estrogens in women are estradiol, estrone, and estriol. Estrogen levels fall after menopause. Several types of estrogen therapies are available for menopause indications. Also available in some contraceptives, but at much higher doses than those used for menopause treatment. See also Estrogen therapy (ET).</td>
</tr>
<tr>
<td><strong>Estrogen patch</strong></td>
<td>A form of estrogen therapy contained in a special patch that is adhered to the skin. The patch technology allows a gradual release of estrogen through the skin directly into the bloodstream where it circulates throughout the entire body (systemically), affecting many different tissues. See also Estrogen.</td>
</tr>
<tr>
<td><strong>Estrogen plus progestogen therapy (EPT)</strong></td>
<td>Also known as combination hormone therapy. Estrogen is the hormone in this duo that provides the most relief for menopause-related symptoms. Progestogen is added to protect the uterus from estrogen stimulation and the increased risk of endometrial cancer. See also Progestogen.</td>
</tr>
<tr>
<td><strong>Estrogen therapy (ET)</strong></td>
<td>General term describing a wide range of estrogen types that are available in various systemic and local formulations in oral, skin patch, and vaginal prescription drugs government approved for treating moderate to severe hot flashes and vaginal atrophy, and preventing postmenopausal osteoporosis. ET is prescribed without progestogen to women without a uterus. See also Estrogen, Progestogen.</td>
</tr>
<tr>
<td><strong>Homeopathy</strong></td>
<td>A system of medical practice that treats a disease by the administration of minute doses of a remedy that would in healthy persons produce symptoms similar to those of the disease.</td>
</tr>
<tr>
<td><strong>Hormone</strong></td>
<td>Specifically, a sex hormone (such as estrogen, progesterone, testosterone) produced by the ovaries (in women), testes (in men), or adrenal gland (in both women and men) that affects the growth or function of the reproductive organs or the development of</td>
</tr>
</tbody>
</table>
secondary sex characteristics. Can also be used as medications when made in a laboratory to be identical to what the body makes, or somewhat different but with similar effects. Also includes non-sex hormones such as thyroid hormone.

**Hormone therapy (HT)**
Prescription drugs used most often when treating menopause symptoms. Encompasses both ET and EPT. HT replaces the more dated term hormone replacement therapy (HRT). See Estrogen therapy and Estrogen plus progestogen therapy.

**Hot flash**
A condition resulting in a red, flushed face and neck, perspiration, an increased pulse rate, and a rapid heartbeat, often followed by a cold chill. Sometimes called a hot flush, this is the most common menopause-related discomfort thought to be the result of changes in the hypothalamus, the part of the brain that regulates the body’s temperature. If the hypo-thalamus mistakenly senses that a woman is too warm, it starts a chain of events to cool her down. Blood vessels near the surface of the skin begin to dilate (enlarge), increasing blood flow to the surface in an attempt to dissipate body heat. See also Vasomotor symptoms.

**HRT or Hormone Replacement Therapy**
Term once used to describe hormone therapy (HT) for menopause, now disallowed by government regulators. See also Hormone therapy (HT).

**Hysterectomy**
Surgical removal of the uterus. Does not result in menopause, but ends menstrual periods and fertility. The term is often mistakenly used to describe removal of the uterus and both ovaries, which results in surgical menopause.

**Isoflavones**
Naturally occurring estrogen-like compounds found in soybeans, soy products, and red clover. Also available in nonprescription supplements.

**Local therapy**
Drug therapy that has an effect limited to the site of drug application. It is not systemic (does not circulates through the body, affecting many body systems). Examples include most vaginal estrogen drugs. See also Systemic therapy.

**Menarche**
The first menstrual period.

**Menopause**
The final menstrual period, which can be confirmed after going 12 consecutive months without a period. This time marks the permanent end of menstruation and fertility. It is a normal, natural event associated with reduced functioning of the ovaries, resulting in lower levels of ovarian hormones (primarily estrogen).
Menopause transition  See Perimenopause.

Menstrual cycle  The time each month (typically every 4 weeks) when an egg develops in the ovary, the lining of the uterus thickens, and the egg is released into the uterus. If the egg is not fertilized by sperm, the lining of the uterus (with the egg tissue) is shed through menstruation and the cycle begins again. This cycle typically becomes irregular during perimenopause and ends completely at menopause. See also Menstruation.

Menstruation  A woman's "period"—the discharge of blood, secretions, and tissue debris from the uterus that recurs in non-pregnant women.

Metabolic syndrome  The presence of three or more of the following factors: central obesity (increased waist circumference), elevated triglyceride levels, low HDL cholesterol, elevated blood pressure, elevated fasting glucose level. Women with metabolic syndrome are at increased risk for heart disease, stroke, and type 2 diabetes (adult onset diabetes).

Mind/body medicine  Self-care approaches to healing for the management of symptoms or illness. Components integrate relaxation techniques with nutrition, exercise, and cognitive skills.

Night sweats  Hot flashes that occur at night that can interfere with sleep, even if they are not strong enough to cause awakening. If heavy perspiration occurs, the condition is called night sweats. While it is a myth that menopause makes a woman irritable, inadequate sleep causes fatigue, which may lead to irritability. See also Hot flashes.

Obesity  Excessive accumulation of fat in the body defined as a body mass index over 30. Obesity is associated with adverse health consequences including type 2 diabetes, cardiovascular disease, stroke, hypertension, some cancers, osteoarthritis, and premature death. See also Body Mass Index.

Ovarian cancer  An abnormal growth of tissue that develops into a malignant tumor in a woman's ovaries.

Ovary  The female gonad, one of a pair of reproductive glands in women located in the pelvis. In premenopausal women, the ovaries produce eggs (ova) and hormones such as estrogen, progesterone, or testosterone. During each monthly menstrual cycle, an egg is released from one ovary. The egg travels from the ovary through a
fallopian tube to the uterus. The ovaries are the main source of female hormones before menopause.

Perimenopause  
A span of time typically lasting 6 years or more that begins with the onset of menstrual cycle changes and other menopause-related symptoms and extends through menopause (the last menstrual period) to 1 year after menopause. Perimenopause is experienced only with spontaneous (natural) menopause, not induced menopause. Also called the menopause transition.

Phytoestrogens  
Plant compounds (such as isoflavones) that have a chemical structure similar to that of estrogen and have weak estrogen-like biologic activity. Available in foods (such as soy) and as nonprescription supplements. See also Isoflavones.

Postmenopause  
The span of time after menopause (the final menstrual period).

Premature menopause  
Menopause that occurs at or before the age of 40, which may be the result of genetics, autoimmune disorders, or medical procedures or treatments.

Premature ovarian failure (POF)  
A condition that occurs at an earlier age than 40 when the ovaries “fail,” causing menstrual periods to stop. POF differs from premature menopause in that ovarian activity may resume.

Premenopause  
The span of time from puberty (onset of menstrual periods) to perimenopause.

Progesterone  
A female hormone that is released by the ovaries after ovulation to prepare the lining of the uterus (endometrium) to receive and sustain the fertilized egg and thus permit pregnancy. If pregnancy does not occur, progesterone (and estrogen) levels fall, resulting in menstruation. Available in prescription and nonprescription therapies (as a bioidentical hormone). See also Hormone therapy.

Progestin  
A class of progestogen compounds synthesized to act like progesterone in the body. Available in oral prescription drugs and combined with estrogen in prescription skin patches. See also Progestogen, Hormone therapy.

Progestogen  
A naturally occurring or synthetic progestational hormone. There are various progestogen options: progesterone (identical to the hormone produced by the ovaries) and several different progestins (compounds synthesized to act like progesterone). See also Progesterone, Progestin, Hormone therapy.
Soy foods (such as soy nuts and tofu) and nonprescription supplements sometimes used for health benefits such as relieving mild hot flashes, although research is not conclusive. See also Isoflavones, Phytoestrogens.

Spontaneous menopause
Menopause that is not caused by any medical treatment or surgery. It occurs, on average, at age 51. Also known as natural menopause.

Supplements
Nonprescription remedies (including vitamins, herbs, calcium, topical progesterone cream, and others) not regulated in North America under the same guidelines as prescription medications by the FDA and Health Canada. Supplements cannot, therefore, achieve a “government-approved” status and do not have to provide package inserts on how to take a drug safely, identify its negative side effects, or avoid potentially dangerous interactions with other drugs. Marketers of supplements are not legally permitted to make health claims for non-disease conditions (e.g., hot flashes) without research to prove the claims.

Surgical menopause
Induced menopause that results from surgical removal of both of the ovaries (bilateral oophorectomy) for medical reasons. Surgical menopause can occur at any age before spontaneous menopause. See also Bilateral oophorectomy.

Systemic therapy
Drug therapy that circulates through the body, affecting many body systems. Examples include oral and skin patch estrogen drugs. See also Local therapy.

Temporary menopause
Term used to describe the event of menstrual periods stopping temporarily due to lifestyle factors such as high levels of stress, excessive exercising and/or dieting, or due to medications used to treat fibroids, endometriosis, or PMS. Once a woman adopts a healthier lifestyle or stops her medication, her ovaries may resume normal production of hormones.

Testosterone
The male androgen hormone that is essential for sperm production and responsible for inducing and maintaining male secondary sex characteristics. In women, testosterone (partially produced by the ovaries) may regulate sexual desire and may also help maintain bone and muscle health.

Transdermal therapy
Therapy delivered through the skin into the bloodstream, such as via a skin patch or a topical lotion, cream, or gel.

Uterine bleeding
Any bleeding that originates in the uterus, including a menstrual period, used to describe abnormal uterine bleeding.
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Vaginal atrophy</td>
<td>A condition in which estrogen loss causes tissues of the vulva (the external parts of the female genital organs) and the lining of the vagina to become thin, dry, and less elastic. Vaginal secretions diminish, resulting in decreased lubrication.</td>
</tr>
<tr>
<td>Vaginal estrogen</td>
<td>Prescription estrogen therapy that is applied vaginally (as cream, ring, suppository, or tablet) and is government approved to treat moderate to severe vaginal dryness and atrophy. Most vaginal estrogen therapies provide local, not systemic, treatment.</td>
</tr>
<tr>
<td>Vasomotor symptoms</td>
<td>Also known as hot flashes and night sweats, common symptoms during perimenopause and early postmenopause. In almost all women, menopause-related vasomotor symptoms subside over time without any intervention. See also Hot flashes, Night sweats.</td>
</tr>
<tr>
<td>Women's Health Initiative (WHI)</td>
<td>Large research project established by the National Institutes of Health in 1991 to look into the most common causes of death, disability, and impaired quality of life in postmenopausal women.</td>
</tr>
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</table>

**ADDITIONAL TERMS**

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Premenstrual Vocal Syndrome</td>
<td>A vocal syndrome characterized by vocal fatigue, decreased range, a loss of power and loss of certain harmonics. The syndrome usually starts 4-5 days before menstruation in some 33% of women.</td>
</tr>
<tr>
<td>Menopausal Vocal Syndrome</td>
<td>A vocal syndrome characterized by lowered vocal intensity, vocal fatigue, a decreased range with loss of high tones and a loss of vocal quality.</td>
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ABSTRACT

This study seeks to provide female singers and their teachers with insight on achieving career longevity through the collection of data and commentary from seasoned professional female singers. One hundred artists from the United States and Canada, each with a singing career spanning twenty years or longer, were invited to complete the online survey The Professional Female Singer and Career Longevity via SurveyMonkey.com.

Participants, ages 45-75, responded to an array of questions to create an overview of their vocal careers. The singers provided answers on physical and vocal health challenges they experienced, as well as the impact of menopause, hormone replacement therapy, and the perceived benefits of teaching to maintain the voice. Respondents also shared information on the lifestyle, dietary, and other choices they believe contributed to career longevity.

The sample population, composed of forty-nine mezzo-sopranos and fifty-one sopranos, is predominantly made up of baby boomers, the generation born between 1946 and 1964. It is significant to note that none of the one hundred singers reported being “retired” from the profession. All continue to engage in performing, teaching, or a combination thereof.

According to the U.S. Census Bureau, life expectancy for women over the past century has nearly doubled from an average of 48.3 years in 1900 to 81.3 years in 2010. Women can now expect to live a considerable portion of their life in a postmenopausal state. This document adds first hand reports by female professional singers to the present voice science research on the benefits of diet, exercise, lifestyle choices and hormone therapy. Singers should be educated about the benefits of maintaining hormonal balance and its direct impact on preserving the voice. Further study is warranted to explore which hormone replacement therapies are proving to have the greatest vocal benefit and to disseminate information on which natural/alternative medicines and modalities female singers and voice teachers feel help maintain their voices and contribute to career longevity.

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CHAPTER ONE

INTRODUCTION

Interest in the topic of career longevity among professional female singers stemmed from the researcher’s desire to preserve her voice as she approached middle age. After singing and teaching for nearly two decades, her voice was gradually becoming less responsive and prone to vocal fatigue after moderate voice use. The source of these vocal issues was a mystery. It was unclear whether the inconsistencies in vocal production were the result of acid reflux, lack of physical strength or the first signs of aging. By age forty-six, the researcher’s usual twenty-minute regimen of vocal warm-ups wasn’t yielding a clear, flexible, and resonant tone. While the primo passaggio was becoming increasingly unpredictable, the upper range was expanding, clear, and resonant. The thought that “the change” might be underway, became a serious concern. She had little information on what physical changes might be in store, nor the potential vocal issues that could arise from the hormonal fluctuations associated with perimenopause. The need for experiential guidance prompted the researcher to reach out to mature women in her field who were actively using their voices for performing and teaching. Three broad questions formed the foundation of this project: 1) What choices did professional female singers make that helped preserve their voices? 2) What vocal and physical challenges did they face during their careers? and 3) How long were professional female singers able to perform and teach?

It was decided that contacting professional female singers in the 45-75 age range could yield a diverse sample of highly-experienced performers and voice teachers who were also currently in one of three phases of reproductive life—premenopause, perimenopause, and postmenopause. A twenty-six question survey was designed to give an overview of each participant’s background and career experience. Questions regarding health issues and other factors impacting performing and teaching were also developed. Like many mid-career singers, the researcher was teaching in a private studio and had only limited contact with other professional female singers and voice teachers with whom she might discuss the physical and vocal changes associated with aging.

The Professional Female Singer and Career Longevity Survey is the data collection resource which serves as the foundation for this treatise. The following document reveals, through straightforward commentary, information on the life experiences of 100 professional
female vocal soloists and teachers. Each artist had a unique set of choices and challenges during her career. Many felt that their choices helped preserve their voices and bodies, ultimately contributing to long and satisfying careers. Vocal issues, major surgeries, and life-threatening illnesses affected a number of the participants. While natural aging is inevitable, the survey responses reveal that the end of a woman’s reproductive life does not mean the end of her vocal career.

Social mores have relaxed to the point of allowing discussion of even the most intimate subject matter. Television shows like Dr. Oz and The Doctors now openly discuss hormonal imbalance and sexual dysfunction. Information on women’s health issues, that at one time was only available to medical practitioners through journals and research studies, is now available to the general public. Entering the keyword “menopause” into the Google search engine on January 30, 2013 revealed 9,130,000 results in just under a second. In a matter of minutes one can be completely overwhelmed by the sheer volume of prescription and natural products claiming to alleviate the symptoms of menopause. The market for these products is fueled by the fact that “every four minutes another American woman enters menopause. Women live one-third of their lives after menopause; and those same women who gave the world reproductive choice and the feminist movement want to know how to stay healthy, strong, and active forever.”

The physiological changes associated with the menopausal transition can dramatically affect a singer’s voice and overall well-being. Because information on the impact of changing hormones on the singing voice rarely appears in women’s health resources and popular literature, singers have to delve deeper to find medical and/or homeopathic treatments that positively affect the voice. Singers should be comfortable discussing the vocal and physical changes that accompany aging and menopause with their colleagues and teachers.

1.1 Quest for Career Longevity

To have a successful vocal career one must possess an unusual instrument and the willingness to commit many years to developing musicianship and a healthy vocal technique. Whether one sings art song, opera, oratorio, music theatre, cabaret, or jazz, the ability to stay healthy, physically and vocally, becomes increasingly important with age. Once singers achieve

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the status of “professional musician,” they can expect greater demands placed on their voices. Performing requires not only vocal and physical stamina, but also the ability to endure the rigors of travel and the emotional strain of separation from family and friends. For women who choose to become professional singers, knowing how to protect their voices over the course of a thirty or forty year career not only requires commitment and sacrifice, but also education on the impact of changing hormones and the effects of aging on the singing voice.

1.2 Purpose of the Study

The researcher read the autobiographies, biographies, and interviews of three renowned twentieth-century mezzo-sopranos to look for advice on achieving career longevity. Each artist shared information on minor illnesses. None of these singers spoke directly on the topics of aging, major illnesses, or menopause. We do not know if any of these issues specifically led to their retirement from performing. Such personal matters were considered “taboo” and outside the realm of polite conversation, especially in the interview setting.

All three artists enjoyed considerable international fame. Many of their performances are recorded and document their unique vocal gifts and remarkable artistry. Each of their careers spanned well over twenty-five years and included opera, art song, and concert repertoire. English mezzo-soprano Dame Janet Baker (b.1933) sang from 1956 to 1982 and Austrian mezzo-soprano Christa Ludwig (b.1928) sang from 1946 to 1994. Baker and Ludwig carefully planned their departures from the operatic stage through a series of farewell concerts. The renowned Italian mezzo-soprano Giulietta Simionato (1910–2010) sang from 1928 to 1966 and shocked everyone by simply announcing after a 1966 performance that it was her “last.” Her nearly forty year career ended overnight. Further research revealed that a number of renowned twentieth-century singers had retired at or around age 50; as was the case for Risë Stevens (age 48), Beverly Sills (age 50), Renata Tebaldi (age 51), and Nell Rankin (age 52). These singers reached mid-life and stopped performing. This information significantly added to the researcher’s motivation to explore the impact of menopause on career longevity.

The study which follows gathers first-hand accounts from mature professional female singers of the vocal and health issues that have occurred during their careers and includes information on the choices they made which contributed to achieving career longevity. The research also presents information from current voice science and women’s health resources
which may be beneficial to female singers as they progress through their performing and teaching careers.

1.3 Delimitations of the Study

This research is limited to its particular participants and methodology. A minimum of either twenty years of performing and/or teaching experience was the prerequisite for participation in this project. The sample population is made up of professional vocal soloists, who performed various genres including opera, oratorio, art song, and music theatre. One hundred women, ages 45-75 contributed to this study. All the participants are currently engaged in performing, teaching, or both.
CHAPTER TWO

REVIEW OF LITERATURE

During the discovery phase of this treatise the researcher reviewed literature in two key areas: the professional female singer and women’s health. Information focused on women in mid-life was found in a variety of print and online resources. Of particular interest was literature which would explain the effects of natural aging on the body and the voice. For women, the natural aging process can take dramatic turns as they enter perimenopause and transition to the end of their reproductive lives. A number of valuable resources were found which explain the complex role of hormones in the body and the importance of maintaining hormonal balance for vocal health.

2.1 Women’s Health Resources

Leading professionals from the fields of endocrinology and gynecology, as well as women’s health advocates, are now publishing comprehensive menopause books for the general public. Many books on women’s health fall into one of two categories: 1) those that promote hormone replacement therapy (synthetic or bioidentical) and 2) those which promote an “all natural” approach which focuses solely on plant-based remedies, vitamin and minerals, diet, and exercise. The researcher found four books containing excellent information on the female reproductive system, the endocrine system, and the importance of maintaining hormonal balance. They also contain references to additional research and national organizations focused on helping women maintain their quality of life during “the change.”

The first resource, Outliving Your Ovaries, is written by Marina Johnson, endocrinologist, pharmacist, and medical writer. Johnson begins her book by explaining that because every woman goes through menopause, it’s often not even considered a medical problem. In the past, women were often patted on the head and told “Honey, you’re getting older and you just need to accept it.” Estrogen deficiency leads to a myriad of symptoms that affect a woman’s quality of life and to an increased risk of degenerative
diseases including heart disease, osteoporosis, Alzheimer’s disease, diabetes, and colon cancer.  

Johnson presents an in-depth explanation of the endocrine system and all the related hormones. She presents her views on the pros and cons of hormone therapy and the benefits of each available treatment option. Johnson explains how the role of estrogen in the body reaches far beyond its well-known reproductive role. As Johnson explains,

Estrogen receptors have been discovered on many tissues throughout the body including the brain, lungs, heart, liver, blood vessels, kidney, breast, skin, ovary, uterus, vagina, and bones. The presence of estrogen receptors on so many tissues suggests great importance of estrogen to the optimal function of the entire body.

_The Gynecological Sourcebook_ by M. Sara Rosenthal is an expansive resource designed to educate women of all ages on female anatomy, reproductive health issues, and menopause among other topics. Rosenthal recommends specific foods, herbal supplements, and exercise for each condition she discusses.

In _The Wisdom of Menopause: Creating Physical and Emotional Health and Healing During The Change_, author Christiane Northrup educates her readers on strategies for coping with menopausal symptoms. She focuses on helping women regain their sense of physical and emotional well-being during the menopause transition. The book contains a twenty-five page resource guide as well as over forty pages of medical articles.

The fourth resource is _The Cleveland Clinic Guide to Menopause_, written by Holly L. Thacker. The book contains information on the symptoms of menopause, nutrition recommendations and hormone therapy options. As Thacker explains,

Some women never need HT, some women need HT for a limited time, and many women need HT indefinitely. . . . There’s no time limit to the use of HT, but there’s a need to re-evaluate your need for it periodically, as with any therapy. For women who start HT around the time of menopause and continue it for five or more years, they actually tend to have less heart disease, less coronary calcifications, and a lower death rate. . . .I ask her to listen to her body and periodically get re-evaluated. As a woman ages, metabolism changes, so a lower dose of hormones may be as effective as a higher dose was when she was younger.

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6 Ibid., 45.

Menopausal symptoms can be an indicator of excessive as well as deficient estrogen, progesterone, and testosterone levels. Excerpts from Northrup’s list of symptoms associated with hormonal imbalance are outlined in Appendix D.8

Women’s health providers recommend maintaining a menstruation calendar as well as having hormone levels checked periodically to aid in documenting the menopausal transition. Additional information on women’s health was found through the websites of several international women’s health organizations.

2.2 International Women’s Health Websites

The following international organizations are devoted to women’s health issues and menopause. The descriptions below come directly from each organization. Fact sheets and other downloadable educational materials are available from each website.

www.endo-society.org

Founded in 1916, The Endocrine Society is the world's oldest, largest, and most active organization devoted to research on hormones and the clinical practice of endocrinology. Today, The Endocrine Society's membership consists of over 14,000 scientists, physicians, educators, nurses and students in more than 80 countries. Together, these members represent all basic, applied, and clinical interests in endocrinology.9

www.ims.org

The aims of the International Menopause Society are to promote knowledge, study and research on all aspects of aging in men and women; to organize, prepare, hold and participate in international meetings and congresses on menopause and climacteric; and to encourage the interchange of research plans and experience between individual members. The Society is a non-profit association, within the meaning of the Swiss Civil Code. It was created in 1978 in Jerusalem during the Menopause Congress. In addition to organizing congresses, symposia, and workshops, the IMS publishes a quarterly newsletter and owns its own journal: Climacteric, the Journal of the International Menopause Society, published by Informa Healthcare. The IMS has two sub-organs: CAMS, the Council of Affiliated Menopause Societies, and the WSSM, the World School for the Study of the Menopause.10

8 See Appendix D, p.91.
10 The International Menopause Society (IMS), http://www.ims.org (accessed 17 March 2013)
www.menopause.org

Founded in 1989, The North American Menopause Society (NAMS) is North America’s leading independent, nonprofit organization dedicated to promoting women’s health and quality of life through an understanding of menopause. Its multidisciplinary membership of 2,000 leaders in the field—including clinical and basic science experts from medicine, nursing, sociology, psychology, anthropology, pharmacy, epidemiology, nutrition, and education—allows NAMS to be the preeminent resource on all aspects of menopause to both healthcare providers and the public.11

www.sigmamenopause.org

Sigma is the Canadian Menopause Society. It is a multidisciplinary group of family physicians, specialists and healthcare professionals who are interested in menopausal and postmenopausal health. Our mission is to advance the health of women at and beyond the menopause transition through education initiatives and knowledge transfer. SIGMA is the hub of knowledge transfer of menopause and related issues. It will link up with menopause clinic and menopause practitioners across Canada to share knowledge, to act as advocate for menopausal health in Canada, to provide up to date knowledge to our patients, and have a unified voice in Canada to speak for the women in Canada.12

In addition to the hormonal and physical changes a woman experiences as she ages, a professional female singer needs to be informed of the potential vocal changes that can occur, as they may directly impact her performing and teaching career. An exploration of singer-specific literature on vocal health led to the following resources.

2.3 Voice Science Resources

Throughout history voice pedagogues have shared advice on vocal technique and care of the singing voice. In 1967 both D. Ralph Appelman’s book The Science of Vocal Pedagogy, Theory and Practice and William Vennard’s book Singing, the Mechanism and the Technique were published. Since then, there has been a steady increase in the quality and quantity of voice science materials being published for use in the voice studio and pedagogy classroom. Through the work of Johan Sundberg, Ingo Titze, Donald Gray Miller, and others, we now understand the intricacies of vocal production and can measure changes in the voice that may indicate the presence of vocal issues.

In her book *The New Voice Pedagogy* Marilee David explains,

Just as our knowledge of overall health allows the general population to live longer, so our increased knowledge of the voice allows singers to sing longer. Singers of the past who knew how to take care of their voices, including how to avoid youthful ‘burn-out,’ spent a large percentage of their adult lives performing. Today’s singer who takes care of his or her voice and body may find the voice retains its beauty into the fifth decade of life or longer. Color, endurance, agility, and, in some cases, range change as the voice matures and ages. These changes are caused by changes in the laryngeal tissue, the articulation of laryngeal joints, the elasticity of the lungs, the air supply, muscle tone, hormones and hearing.\(^{13}\)

In addition to physical issues outlined above, female singers need to be aware of the impact of hormones on the larynx. In 1999 otolaryngologist Jean Abitbol, and his wife, gynecologist Béatrice Abitbol published their ground-breaking research in the article “Sex Hormones and the Female Voice” for the *Journal of Voice*. In the twenty-two page article the authors discuss the function of each hormone (estrogen, progesterone, and testosterone) on the body and in particular, the voice. They described the vocal quality of women experiencing premenstrual or menopausal voice syndrome.\(^{14}\) Jean Abitbol observed,

The female voice evolves from childhood to menopause, under the varied influences of estrogen, progesterone, and testosterone. The premenstrual vocal syndrome is characterized by vocal fatigue, decreased range, a loss of power and loss of certain harmonics. The syndrome usually starts 4-5 days before menstruation in some 33% of women. The menopausal vocal syndrome is characterized by lowered vocal intensity, vocal fatigue, a decreased range with loss of high tones and a loss of vocal quality. In a study of 100 menopausal women, 17 presented with a menopausal vocal syndrome. To rehabilitate their voices, and thus their professional lives, patients were prescribed hormone replacement and multi-vitamins. All 97 women showed signs of vocal muscle atrophy, reduction in the thickness of the mucosa and reduced mobility in the cricoarytenoid joint. Multi-factorial therapy (hormone replacement therapy and multi-vitamins) has to be individually adjusted to each case depending on body type, vocal needs, and other factors.\(^{15}\)

To better understand the laryngeal changes that naturally occur with age, one can turn to the field of voice science. Author and founder of the Voice Foundation, Robert T. Sataloff is the editor of the two volume series *Vocal Health and Pedagogy*, 2\(^{nd}\) edition, which contains a wealth of useful information for singers, voice teachers, and students of pedagogy. In *Volume I –


\(^{14}\) See Additional Terms, xiv.

Science and Assessment, Chapter 4, “Clinical Anatomy and Physiology of the Voice,” Sataloff explains the function of each component of the larynx and vocal tract. A number of highly-detailed illustrations can be found as well as an explanation of phonation and respiration for singing. In addition to several teaching resources, Sataloff includes a Laryngeal Examination Form in Appendix IIIB, which could be utilized by teachers to identify vocal issues to listen for and observe in their students. The document is also informative for singers who may be experiencing vocal issues with their singing or speaking voice.

Volume II: Advanced Assessment and Treatment contains a number of chapters which provide foundational information for professional singers, including the following:

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<tr>
<td>02</td>
<td>The Effects of Age on the Voice</td>
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<td>03</td>
<td>Endocrine Dysfunction</td>
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<td>10</td>
<td>Nutrition and the Professional Voice</td>
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<td>14</td>
<td>Psychological Aspects of Voice Disorders</td>
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<td>16</td>
<td>Medications and the Voice</td>
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<td>17</td>
<td>Medications for Traveling Performers</td>
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Appendix II contains an outline for daily practice and a number of word lists to facilitate blending, easy onset, etc., which can contribute to vocal maintenance for singers of all ages and stages of development.

In their discussion of the effects of aging, Sataloff and Linville explain that key components of the vocal tract ossify over time. “The hyoid bone starts to ossify (turn to bone) by two years of age. The thyroid and cricoid cartilages ossify during the early 20s, and the arytenoid cartilages ossify in the late 30s. Except for the cuneiform and corniculate cartilages, the entire laryngeal skeleton is ossified by approximately age 65.”16

The authors continue by saying,

With aging comes a variety of issues related to deteriorating bodily functions. Among them are accuracy, speed, endurance, stability, strength, coordination, breathing capacity, nerve conduction velocity, heart output, and kidney functions. Muscle and neural tissues atrophy, and the chemicals responsible for nerve transmission change. Ligaments atrophy, and cartilages turn to bone. Joints develop irregularities that interfere with smooth motion. The vocal folds themselves thin and deteriorate, losing their elastic and collagenous fibers. This makes them stiffer and thinner and may correlate with voice changes often noted with aging. The vocal fold edge also becomes less smooth. The not-

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so-cheery picture is one of inevitable decline for all of us. However, the notion that this decline occurs gradually and progressively (linear senescence) is open to challenge. It appears possible that many of these functions can be maintained at a better level than expected until very near the end of life, perhaps allowing a high-quality singing or acting career to extend into or beyond the seventh decade.\textsuperscript{17}

Sataloff and Linville report,

Like death and taxes, most people consider aging changes in the voice inevitable. Indeed, as we get older, fundamental changes in the body, often modify the sound of the speaking and singing voice. Typically we are not surprised to hear breathiness, loss of range, changes in the characteristics of vibrato, development of tremolo, loss of breath control, vocal fatigue, pitch inaccuracies, and other undesirable features in older singers. Although some age-related alterations cannot be avoided in specific individuals, not all of them are manifestations of irreversible deterioration. In fact, as our understanding of the aging process improves, it is becoming more and more apparent that many of these changes can be forestalled or even corrected.\textsuperscript{18}

In the November/December 2000 \textit{Journal of Singing} article “Vocal Aging and Its Medical Implications: What Singing Teachers Should Know,” Sataloff explains,

Certain aspects of the aging process are relatively easy to control medically. For example, as female singers reach menopause, estrogen deprivation causes substantial changes in the mucous membranes that line the vocal tract, the muscles, and elsewhere throughout the patient’s body. These and other hormonal effects are frequently reflected in the voice but can be forestalled for many years through hormone replacement therapy. Dosage is best determined by checking estrogen levels prior to menopause. Preparations containing androgens should be avoided whenever possible because they can cause masculinization of the voice.\textsuperscript{19}

\subsection*{2.4 Dissertations on the Professional Female Singer}

The next phase of this research project involved a search for recently-published dissertations that focused on professional female singers. Four documents were found with content relative to female singers, aging, and vocal longevity. The first is a dissertation written by Ball State University student Judy L. Sadler in 2000, “Musicianship, Career Choices, and Longevity: Marilyn Horne as a Model of Vocal Success.” Sadler states that the purpose of her study is “to provide an historical record of Marilyn Horne’s remarkable career and to discuss the

\begin{footnotes}
\item[17] Ibid., 23.
\item[18] Ibid., 22.
\end{footnotes}
importance of vocal technique and musicianship as it relates to her career.”

She details much of Horne’s five-decade career and devotes chapters to her operatic and recital performances. In Chapter 3, “Longevity: Comparison of Horne’s Career to Other Mezzo Careers,” Sadler compares the careers of Pauline Viardot-Garcia, Rose Bampton, Janet Baker, and Giulietta Simionato, to find out why they retired at an earlier age than Horne. Sadler concludes that Viardot-Garcia and Rose Bampton’s repeated forays into soprano repertoire shortened their careers. English mezzo-soprano Dame Janet Baker “never changed voice categories. . . but chose to retire from the stage, seemingly due to the desire to step away from the extreme pressures of operatic life.”

The details of the last year of Baker’s operatic career and performance regimen are documented in her autobiography, Full Circle.

Italian mezzo-soprano Giulietta Simionato, made her operatic debut in Padua in 1928. After debuting at La Scala in 1936, she sang comprimario roles for eleven years. “It was not until 1947…that La Scala finally offered Simionato the leading roles she was seeking.” She retired without fanfare, singing her final operatic performance in the comprimario role of Servilia in Mozart’s La clemenza di Tito in 1966. Of Baker and Simionato, Sadler notes, “Neither singer had to retire because of great vocal strain or over-exertion, but both cut their careers short nonetheless.”

As of 2000, Marilyn Horne had performed over 1400 recitals. Like Viardot-Garcia and Bampton, Horne switched vocal categories, but as Sadler states, “Horne switched to mezzo-soprano roles but wisely left her old repertoire behind. Likewise, she also avoided mezzo-soprano repertoire that she felt was unsuited to her voice.” Sadler also expressed her own opinion that Horne’s choice to keep art song an integral part of her repertoire helped her to maintain vocal health and played a role in her longevity.

Like many singers, Horne had to deal with many personal issues, at the height of her career, including the death of her father and her high-profile divorce from conductor Henry Lewis.

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21 Ibid., 21.
22 Ibid., 22.
23 Ibid., 24.
24 Ibid., 25.
In the interview, Sadler asked about the personality traits, among them the ability “to endure,” which contributed to her career longevity. Horne said,

It is so hard to pinpoint any one thing. I will have to say that a great amount of concentration is needed. You need to concentrate on the thing you are doing. You need to concentrate on your goals. Things have got to be narrowed down so that you really have a laser beam on what you are doing. I think that is a big, big portion—being able to shut things out at the right time and just zero in on what you are doing. And that means personal things—terrible tragedies, deaths, divorces, all this kind of thing, illness, singing with a cold, singing under a cold, singing over a cold, through a cold—all these things. There is so much that you just have to have the will and the desire to overcome.\textsuperscript{25}

In preparation for the interview, Sadler sent several questions via email, which were transcribed by Horne’s assistant, Anahid Papakian.

JS: Would you please comment on what you feel are the contributing factors to your longevity?

MH/AP: good technician, decent health, appeal to the public, concentration, focus and drive, the love of the music, and enjoyment of public performance…She took risks at times, but always with the knowledge that she would not do harm to her voice. She had respect for her instrument and knew how much and how often and what to sing. Having an instinct for the right advisors, teachers, collaborators, etc.\textsuperscript{26}

During their December 15, 1999 interview at Horne’s Manhattan apartment, Sadler asked Horne to discuss her career in greater detail.

JS: To begin, is there something that you feel is of major importance that only you could tell me about your career: perhaps something about your technique, something about your longevity, something about your rise to fame?

MH: I think basically, number one, I think, you have to be a very strong person physically. And obviously somebody has to give you the gift of a voice. That is not something you can go out and order. Right?

JS: Right.

MH: But as far as longevity is concerned, I think, part of that, being a strong person is in there too, not making bad choices. Basically, having a very healthy respect for my instrument and knowing pretty much just how much it would take and how much it wouldn’t take. Being very careful to rest my voice in between a lot of heavy performances, not talking many times. I would have loved to have been out with my family and my friends having a lot of fun. I was home on vocal silence. And many

\textsuperscript{25} Ibid., 24.
\textsuperscript{26} Ibid., 131.
times, most of the time, the vocal silence was imposed by myself, knowing that if I didn’t speak for 24 hours, my voice would be really rested.

And when I speak about choices, that means choice of roles, choice of music, how many times I sang it, how often I sang it. Also there is knowing, I guess it’s knowing your own body, that at this particular time maybe I would say, “Okay, I am going to push myself to the wall.” But the thing is when you push yourself to the wall, let’s say that’s your limitations of what you can strengthwise, ‘everywise.’ But you know that you can’t stay at the wall. You have to come back.27

JS: How do you deal with traveling so much with the climate changes?

MH: It’s ghastly. Try, you know you can’t really do much about it except try to keep humidity going. That’s one of the big things, so–keep humidifiers in the room. On the plane I actually have a new system I’ve been using for about a year–where I take a surgical mask, and I cut up pieces of a washcloth, and I wet the washcloth. [I] put it inside the surgical mask and wear it the whole time on the airplane, and I keep wetting it and it is amazing how much it helps.28

In the course of their discussion on various opera roles, Horne spoke about tessitura.

MH: I seemed to be able to sing comfortably all night in the middle register and lower register, not having strain in it. I think that’s important. I also, I mean, I am sure you notice I don’t sing woofy, throaty sounds like most mezzos and contraltos do. I don’t believe in it. I think you sing one way, and that is it. I think that manufactured sounds are absolutely [an] anathama [sic] to me.29

In addition to a complete transcription of the interview, the appendix to Sadler’s dissertation includes a list of Horne’s operatic roles and copies of the nine recital programs Ms. Horne presented at the William Jewell College Fine Arts Program.

The second dissertation on career longevity is “The Effect of Aging on the Singing Voice and the Vocal Longevity of Professional Singers,” by Marie Antoinette Drohan, a student of Columbia University, Teachers College. The author focused her study on the physiological aspects of natural aging and its effects on the singing voice. She provides the reader with an in-depth overview of the science of singing with illustrations of the anatomy of the larynx and the respiratory system, along with references from leading researchers in the field of medicine and voice science, including Abitbol, Benninger, Frank, Linville, Sataloff, and Sundberg, among others. The information she presents is beneficial for any singer wishing to learn the

27 Ibid., 132-33.
28 Ibid., 135.
29 Ibid., 137.
fundamentals of the singing process and how the larynx will change in composition and lower in position as a person ages. In her review of literature, Drohan cites a number of studies on the impact of obesity on the respiratory system, and research studies on the vocal folds which reveal that

There are normal physiologic changes that occur as one ages that impact the voice such as vital breath capacity, loss of bulk of the vocal folds, ossification of the laryngeal joint and cartilages, and bowing of the vocal folds. (Hollien, 1987; Holmes & Lepper, 1994; Linville & Fischer, 1985; Michel, Brown, et al., 1987; Sinard and Hall, 1998). Davies and Jahn (1998) assert that in the course of aging there is a loss of vocal fold mass and suppleness along with fine muscular control.  

Esophageal reflux, medications, speaking habits, hearing loss, and their potential impact on the singing voice are also discussed in Chapter II. Drohan’s research was originally prompted in part by her observation that male singers at the Metropolitan Opera appeared to have longer singing careers than those of their female colleagues. Drohan interviewed twelve senescent singers, six male and six female, ages 65-83. The participants, residents of the New York metropolitan area, had sung opera professionally between seven and fifty years for the men and ten to forty-five years for the women.

The criteria for the study was that “they be professional vocal soloists whose singing engagements resulted in 50% of their annual income from singing over several years.” Most were an average age of seventy-three and had retired at the time of the interviews. Several were still actively teaching in private voice studios. Drohan asked the participants to share their perspectives on their own aging voices and to talk about what they had observed in other singers of similar age. Several reported pitch problems, lack of breath, lack of exercise, and weight gain among other issues. One female singer said that, “she speaks with many senior singers who expressed concern for their voices. She felt these troubled singers have destroyed their voices. ‘Women’s voices tend to get lower and lower. They are not practicing and they think they can do the roles they were doing years ago.’ She felt singers should be able to the same roles if they work on them continuously.”

Drohan asked the singers what vocal issues they were experiencing at that time that they had not experienced twenty to thirty years ago. Participants

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31 Ibid., 88.

32 Ibid., 118.
were also asked if they had perceived any changes in their voices as they progressed through menopause and andropause. Future career goals and the inevitability of retirement were also discussed. The singers shared information on what methods they used to ensure vocal longevity. Participants were asked if they perceived the need for a published guide on the effects of aging on the singing voice. Drohan also wanted to know if personal testimony from other professional senior singers would be valued over information provided by voice scientists. She asked each participant for a closing statement on the subject of aging and vocal longevity among professional singers.

Her participants were unanimous in their beliefs that well-trained singers should be able to extend their singing careers as long as they wanted to, assuming that their voices had not been damaged through oversinging or singing inappropriate repertoire. Several felt proper diet and exercise contributed to maintaining their voices. On the subject of menopause, all six women reported experiencing symptoms but did not notice any vocal change. None of the singers utilized hormone replacement therapy because they either didn’t need it or questioned its safety. Participants did report a loss of range in their upper registers. Their experience seems to corroborate research on aged-related anatomical changes to the larynx. Several participants reported experiencing more breath management issues as they aged, which they primarily attributed to lack of exercise and weight gain. Their comments support the supposition of all voice scientists and voice teachers that maintaining good respiratory function is crucial for healthy vocal production. Among the women participants, two reported changes to their voices which occurred with menopause.

Amy [78] was 50 when she first experienced problems with her voice, which she attributed to menopause. At 52 she was postmenopausal, suffered severely from hot flashes, and gained excessive weight. Her vibrato had slowed and she was experiencing hoarseness. She thought she might have to end her career. Her teacher told her she had to rework her voice. She said that she knows several female singers who lost their voice during this time and had to retire. Amy felt her voice got darker during the onset of menopause. She often experienced hoarseness deeming it necessary to take the prescription drug, Pregnazone [sic], to help reduce the swelling of the vocal folds. Amy often had to call her doctor when she had singing engagements out of town. She never considered hormone replacement therapy because she was afraid of unnaturally altering her hormonal level.\(^{33}\)

\(^{33}\) Ibid., 113-14.
On the subject of career longevity, “two of the males stress that vocal longevity is dependent upon exercise and nutrition. They feel in order to sing opera, an aging singer must be serious enough to work hard as they age. Four subjects seemed very passionate about singing and claimed that one’s positive attitude in life is a factor for healthy singing during the senior years. While one did not think vocalizing is necessary for her, three of the women affirm[ed] that vocalizing keeps the voice youthful and agile.”

While discussing the reasons for retirement, Drohan noted,

Some of the female subjects reported experiencing age discrimination and “dismay at having to play older comprimario roles, singing in a lower range because older women were supposed to sound that way” according to opera management. Casting directors appear to have an objection to an older female singer playing a young heroine while senior male singers can portray a lover and hero at any age in concordance with the acceptance of today’s society. There was an undertone of resentment by the females to this realization. It seems that this practice may have denied female singers a lengthier career on the operatic stage. It is worth noting that this may possibly be viewed as sexual discrimination in the world of opera, unfairly lengthening the careers of senior males while forcing senior female opera singers into an earlier retirement.

Drohan includes several interesting suggestions for future research focusing on fitness and longevity and a long range study which would record the vocal quality of professional singers over a twenty to thirty year period. She feels that the creation of a handbook on the aging singing voice, which would combine voice science research and the personal testimony of elite professional singers, would be an ideal educational resource for singers, vocal coaches, and choral conductors.

The third dissertation consulted for this treatise is Catherine Froneberger Siarris’s 2009 dissertation, “The Aging Female Voice: Medical Treatments and Pedagogical Techniques for Combatting the Effects of Aging with Emphasis on Menopause.” Siarris begins by reviewing several important research studies on hormones and their effect on the female voice. She points the reader to research by French otolaryngologist Jean Abitbol and his wife, gynecologist Béatrice Abitbol, on premenstrual and menopausal vocal syndrome. Quoting from the Journal of Voice article published in September of 1999, “Sex Hormones and the Female Voice,” she states, Abitbol would take a smear test of a singer’s vocal folds at different stages of the menstrual cycle. He would then send the singer down the hall to his wife who would do a cervical smear. ‘When we put the two sets of slides together, we could not tell whether it was the vocal fold or

34 Ibid., 134.
the cervix. In other words, the cellular changes in the vocal folds over the course of the menstrual cycle mirrored those of the cervix. In their study of 100 menopausal women 17% exhibited symptoms of menopausal vocal syndrome which included lowering of vocal intensity, vocal fatigue, decreased range, and loss of resonance in the speaking and singing voice. This vocal syndrome is reported to be progressive and especially noticeable by voice professionals.36

Siarris also references the work of Monique Boulet and Björn J. Oddens, who studied 48 female and 24 male professional singers aged 40-74 years old to determine whether or not men’s and women’s voices age in different ways.

Seventy-seven percent of the women interviewed and 71% of the men were of the opinion that the voice underwent changes around the age of 50. Female singers reported negative changes in the upper registers and problems with voice control more often than men. Twenty-nine percent of women experienced negative voice changes around age 50, compared to 38% of men. Men and women reported huskiness; however, women frequently had more problems with voice emission, voice control and reaching their highest registers. Twenty-seven of the women reported voice changes during menstruation and five women reported voice change during the use of oral contraceptive pills. The broad findings from this study indicate that female singers experience voice change during menopause.37

Siarris included a review of the Drohan dissertation discussed earlier. She also points to Sataloff’s chapter on “The Effects of Age On The Voice” from the 1998 edition of Vocal Health and Pedagogy. Sataloff asks, “How old is old?” and reminds us that “biological age takes into account the condition and function of each individual body. The commonly desired goal is to slow biological age while chronological age advances. . . . Sataloff states that estrogen deprivation causes substantial changes in the mucous membranes which line the vocal tract and the muscles throughout the body. He notes that the use of HRT can forestall this aging effect for years, stating that dosages are best determined by checking patient estrogen levels and establishing a baseline prior to the onset of menopause.”38

Siarris also includes information from voice teacher Barbara Doscher, author of The Functional Unity of The Singing Voice, who said, “Maintaining moderate weight, blood pressure, percentage of body fat, and vital breathing capacity are even more important than chronological

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Siarris includes portions of the article by David L. Jones, “Vocalizing through Menopause: Regaining Lost Vocal Function,” which appeared on his website www.voiceteacher.com in September of 2009 and includes his list of menopause symptoms, four case studies, and five vocalises designed for menopausal singers. The next portion of Siarris’s dissertation consists of the results of a twenty-question survey conducted with fifty female singers she “thought to be in an age group affected by menopause. Eligibility to participate required having experienced the effects of perimenopause, menopause, or having been thrust into early menopause due to a hysterectomy or other medical protocol.” The sample population included amateur singers, voice teachers, professional singers, choral conductors and opera directors. Siarris found that some of the participants began experiencing symptoms of menopause as early as 30-35 and a few as late as 55-60. All the participants reported being in good or excellent physical condition at the onset of menopause. Twenty-two percent of the singers transitioned to a lower voice category and four percent moved to a higher category. Siarris afforded the participants a choice to indicate all the symptoms of menopause/perimenopause they experienced from a list of six symptoms. Their responses give a sense of the prevalence of menopausal symptoms among female singers. Of the 62% who reported symptoms, 46.9% reported loss of vocal stamina, 42.9% loss of vocal range, 38.8% hoarseness, 36.7% loss of breath capacity, and 28.6% drying of mucus membranes.

Siarris asked her participants if they stopped or considered stopping singing during perimenopause or menopause. Eighty-seven percent said, “No.” Sixty-eight percent reported that they felt singing through menopause helped to maintain vocal capacity. Of the 42% who reported using hormone replacement therapy, 38.8% reported the alleviation of symptoms and 12.2% felt it helped their voices. Among the women taking HRTs, 28.6% reported feeling that the benefits outweighed any potential risks. Only ten percent of the participants had tried bioidentical hormone therapy. When asked about vocal issues that arose during menopause, Many mentioned extreme hoarseness as a side effect of menopause, whereas one respondent indicated breath and pitch control being affected. One respondent spoke about the sudden, drastic onset of her symptoms. She indicated a drying of mucus membranes and drying of her skin and commented that drinking large quantities of water did not help. . . . This singer took HRT for 7 years, and although it helped alleviate hot flashes and sleep problems, it did not help her voice.

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39 Ibid., 33.
40 Ibid., 38.
41 Ibid., 44.
42 Ibid., 55.
She indicated that she had found a “new” postmenopausal voice and was glad that she continued to sing through menopause.\textsuperscript{43}

Siarris included one open response question wherein she asked singers to “give a brief account of how your voice was affected by the symptoms of menopause/perimenopause. What could you recommend to other singers who are experiencing some of these symptoms now?”\textsuperscript{44}

Some of the participant comments included:

1. The middle voice became very dry and quirky. I would recommend that they find a doctor trained to consider the whole body, and not just one part—a wholistic physician.

2. I am currently experiencing shortness of breath while singing long, legato phrases. I just take more breaths and try not to worry about it!!!

3. There was a lot of anxiety with my singing. . . . I would get so nervous and tense that my voice would crack and my throat would close up.

4. Loss of range, breath control, [and] pitch control. Keep singing no matter what!

5. Through bio-identical hormone therapy, which took a while to regulate, the symptoms of menopause have subsided. . . . The hot flashes are gone and my voice isn’t cracking anymore, except if I have some acid reflux. . . . I addressed the breath capacity issues through exercise and losing some weight.

6. The main problem that I am experiencing during this perimenopausal period is hoarseness. At the beginning of each week, my voice is strong and clear. But, throughout the week as I teach and conduct choirs, my voice becomes hoarse. This adversely affects my range, volume, and ability to sing in general. By Friday in most weeks, I hardly have a voice at all. The only thing that really helps is vocal rest over the weekend.

7. My voice became raspy, my range lowered, vibrato, of course, grew wider, breath decreased, not as rich or full. Stay on top of treating the symptoms (dryness) [with] hormone replacement therapy, employ better vocal care, stay more hydrated, sing through this [change].

8. Due to mood swings, I was a little more uneasy when singing in public, especially if I was performing from memory. My breath support capacity seemed weakened. I would recommend that as we get older to keep practicing, keep studying, and make opportunities for yourself to sing, i.e., community theater, etc. I feel that warming up is even more important as we get older. We need to keep the vocal cord, a muscle, [sic] in shape, just like other muscles.

\textsuperscript{43} Ibid., 64.
\textsuperscript{44} Ibid., 66.
9. Menopause symptoms had a sudden onset at a time when HTR [sic] was viewed favorably. I was immediately placed on Prempro. I took myself off HTR after 10 years. In 2 months, I chose to resume HTR as I felt as if I had aged 10 years in those 2 months. Resuming the medication gave dramatic, positive results.  

Siarris states that “voice teachers and medical professionals should be aware that prolonging the singing years is possible. Research clearly indicates that regular daily vocal exercises, healthful practices of good nutrition, adequate rest, and cardiovascular training aid in vocal longevity.”

In the conclusion of her dissertation, Siarris says,

Knowledge of menopausal effects on the voice and their causes is crucial if one is to prolong the years of beautiful singing. Although HRT and Bioidentical therapy restore youthfulness to the body and voice, the associated medical risks confirm that this is a temporary solution at best. Research indicates that certain food containing plant estrogens like Alfalfa, soybeans, soy sprouts, crushed flaxseeds, oats, peas, and sunflower seeds may be beneficial to combating menopause symptoms. These foods, important sources of natural estrogens, are loaded with vitamins, fiber, and minerals and are essential to maintaining overall good health. It is possible to maximize the prospects for vocal longevity with careful attention to nutrition, exercise, and daily vocalization.

The final dissertation examined for this research was written by Kathy Kessler Price, a University of Kansas student, in 2010. Her research is entitled “Acoustic and Perceptual Assessments of Experienced Adult Female Singers According to Menopausal Status, Hormone Replacement Therapies, Singing Experience, and Preferred Singing Mode.” Her sample population included over 300 female singers from colleges and universities, community choral groups, private voice studios, and church choirs. Each had either moderate experience—one to ten years of experience in choral/solo singing—or advanced study with ten or more years’ experience in choral/solo singing. As Price states in her abstract, her study “assessed by selected acoustic and perceptual measurements the vocal status and characteristics of experienced, adult female singers (N = 307), according to (a) menopausal stages (pre-, peri-, and post-menopause); (b) use or non-use of hormone replacement therapies (HRT); (c) singing experience (moderate or advanced), and (d) primary singing mode (solo or choral). Acoustic measures included perturbation (primarily absolute jitter and jitter percent, fundamental frequency variation),

46 Ibid., 71.
47 Ibid., 74.
vibrato rate and extent, and range (distance and limits).” Her perceptual measures included a Vocal Context Survey, a Singing Voice Handicap Index, a Voice Change History, pitch range, and listening panel evaluations.  

Price provides an expansive review of current research on topics including vocal aging, respiration, laryngeal change, neurology, and the acoustic measurements of vocal aging. She notes that “many of the vocal changes brought about by aging affect acoustical output, which can be analyzed digitally and spectrally via computer software systems. Numerous studies have examined change in fundamental frequency as well as various measurements of vocal perturbation. Vocal range notably lowers with aging in females, and vocal intensity may be more limited in that population.”

Price’s sample population included 102 premenopausal, 67 perimenopausal, and 138 postmenopausal women. Of the 138 postmenopausal singers, Price found that 111 experienced natural menopause and for twenty-seven women it was surgically induced.

Price’s review covers many research articles on vocal aging, acoustic measurements of vocal aging, hormones and hormone replacement therapy choices. Much of the document could be overwhelming for a reader not trained in voice science terminology or statistics. Price’s tools for conducting research included: Appendix A: Research Study Questionnaire, Appendix B: Singing Voice Handicap Index, and Appendix C: Voice Change History Questionnaire. The research study questionnaire asked singers to report their physical exercise regimen, sleep habits, alcohol intake, singing experience, etc. Perimenopausal and postmenopausal women were asked to list any symptoms they were currently experiencing and indicate which current hormone therapies they were using. The singing voice handicap index contains thirty-five questions with responses based on a Likert scale using 1=Never to 5=Always. Price asked about vocal issues, performance anxiety, vocal production, concerns related to being unable to perform, etc. Voice teachers could use the questions in this index to help students access their voices and issues related to difficulties in singing and performing. Lastly, Price asked the singers to compare their present voices to their premenopausal voices and compare their vocal qualities five and ten years.

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49 Ibid., 21.
50 Ibid., 139-45.
ago. The 529 responses to the voice change history questionnaire were categorized into statements about the vocal tract, vocal health, performance, and vocal source. Price cataloged the comments into one of five populations: Non-HRT Post Menopausal, HRT Post Menopausal, Non-HRT Peri-menopausal, HRT Peri-menopausal, and Pre-menopausal hormonal status.

Price offered a number of suggestions for future research, including a study of hearing loss by hormonal status. Among her participants, 10% of the pre-menopausal women reported hearing loss. That number grew to more than 28% of the perimenopausal participants. A study where participants would document their perimenopausal transition was also suggested.

With an aging population in the United States, it is to be expected that private studios will serve more and more peri- and postmenopausal singers. The current economy has encouraged community college growth. . . . Non-traditional students are returning to school to further their education, establish credentials for second careers, and discover/renew hobbies and avocations to enrich their lives. All these scenarios imply an increase of older singers joining choirs, ensembles, community music theatre companies, singing as soloists in a variety of venues, and seeking training from qualified teachers and choral conductors. . . . With a focus on the specific issues of peri- and postmenopausal voices, the vocal pedagogy profession can help guide women to sing as beautifully and healthfully as possible for as long as possible.\textsuperscript{51}

\textsuperscript{51} Ibid., 119-120.
CHAPTER THREE

METHODOLOGY

To begin this investigative research project, a group of 165 professional female singers were invited to participate in a survey entitled, The Professional Female Singer and Career Longevity. Potential respondents were sent a unique link to the survey through the online data collection service SurveyMonkey.com. Each singer received an email consent letter outlining the participation process. Imbedded in each participant’s email was a link which took them directly to the first page of the survey. Singers from the United States responded to the survey and provided referrals to several singers in Canada and Germany. The respondents came from a variety of sources including colleagues, former classmates, and referrals from Florida State University voice professors and subsequent referrals from singers who had completed the survey. Only two prerequisites were set for participation in the research: 1) status as a professional (self-defined) female singer between the ages of forty-five and seventy-five, and 2) a minimum of twenty years of performing and/or teaching experience. Through a series of multiple choice and open response questions the singers gave an overarching view of their health, career influences, and choices that they felt contributed to career longevity.

The collection process began in December 2011 and continued through mid-March 2012. The survey was sent out in three phrases with the following results:

Table 3.1. Three Data Collectors

<table>
<thead>
<tr>
<th>Collector</th>
<th>Sent</th>
<th>Responded (Partial/Complete)</th>
<th>Opted Out</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Collector</td>
<td>63</td>
<td>38 (0/38)</td>
<td>2</td>
</tr>
<tr>
<td>Second Collector</td>
<td>24</td>
<td>14 (0/14)</td>
<td>3</td>
</tr>
<tr>
<td>Third Collector</td>
<td>76</td>
<td>48 (0/48)</td>
<td>1</td>
</tr>
</tbody>
</table>

Potential respondents received an invitation to participate in this research and information required by the FSU Human Subjects Committee via email (See Appendix B). Upon opening the email each recipient was given an overview of the project and guidelines for completing the twenty-six question survey. No compensation was offered to any potential respondent.

The survey was divided into four general sections: Background Information, Hormones and Health Issues, Performing and Teaching, and Participant Follow-up. The majority of the
questionnaire consisted of multiple choice questions. The need for more in-depth responses to several of the questions, especially those regarding health matters, prompted the investigator to include a number of open-ended questions. Telephone interviews were conducted with twenty-seven women selected from among a random group of survey participants who expressed their willingness to participate through Survey Question # 23: “I would be willing to participate in a phone interview as needed for this project.” The phone interviews lasted approximately forty-five minutes and covered a variety of topics drawn from the survey questions. Arrangements for the phone interviews were made by email or phone call. Each singer was given a dial-in number and unique access code to FreeConferenceCalling.com. The researcher was able to see participants join the call via a “dashboard” or control panel and monitoring or pause the recording as needed. During each phone interview the researcher asked for additional details particular to that individual.
CHAPTER FOUR

SURVEY RESULTS

The following tables and figures reflect the aggregate data responses. The survey questions are presented in their original order. Comments to the open response questions are presented below in their entirety.

4.1 Survey Section I: Background Information

The Background Section was designed to provide the researcher with an overview of the sample population with regard to age, race, voice classification, and data on years performing and teaching.

Survey Question #1
I freely agree to participate, without compensation, in the anonymous confidential survey: “The Professional Female Singer and Career Longevity.”

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>100.0%</td>
<td>100</td>
</tr>
<tr>
<td>No</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

*answered question 100*  
*skipped question 0*

Fig.4.1. Participation Agreement, n =100.

One hundred percent of the participants agreed to the terms of the survey as outlined in the email invitation. This question, in lieu of the signature form required by Human Subjects Committee protocol, was necessitated by the electronic distribution method used in this research. 100% of the respondents answered in the affirmative.
Survey Question #2

In which age category do you fall?

![Age Range](image)

Fig. 4.2. Age Range, n=99.

A five-year “range” was offered in an effort to eliminate any anxiety the singers might have about revealing their actual age. Twenty-seven percent of women were in the 45-50 age range, 19% were 51-55, 26% were 56-60, 16% were 61-66, 5% fell in the 66-70 range, and 6% percent were 71 or older.

Survey Question #3 documents the race or ethnicity of each participant. The classifications match those which appeared on the 2010 United States Census. These included White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, and Other. Respondents were told “You may check more than one box.” Two respondents chose the “Other” option with one indicating Hispanic and the other, Greek-American. The researcher made an effort to reach a more diverse sample population by specifically requesting referrals from colleagues in the African American community. The effort to connect with minority artists through Facebook.com met with only modest success as evidenced by the low rate of participation.
**Survey Question #3**

*What is your race/ethnicity? (You may check more than one box.)*

![Race/Ethnicity Data, n=100.](Image)

**Survey Question #4**

*At what age did you begin voice lessons?*

![Voice Lessons, n=99.](Image)
Survey Question #4 documented the age range when participants began their vocal studies. The data showed that with rare exception, this group of singers began lessons between the ages of fourteen and nineteen. Four percent began lessons at age ten and under, and another 4% started formal study after age twenty.

Survey Question #5

What was your voice type at the start of your career?

![Graph of Voice Type](image)

Fig.4.5. Voice Type, n=92.

Respondents were asked what label they used to describe their voices at the start of their career. An “Other” category was included to allow a singer to provide her own label if she felt a different classification would be more accurate. The challenge to effectively classify one’s voice quality is evidenced by the number of unique labels provided by 10% of respondents. These included: Lyric Coloratura Soprano, Character Mezzo, Soubrette Coloratura, Lyric Coloratura Mezzo, and Dramatic Coloratura Soprano. One singer’s response read, “Mezzo–wasn’t a lyric but also not a dramatic–was often called a baby dramatic, but was somewhere between a contralto and a mezzo.”
Survey Question #6

*How many years have you been performing?*

![Number of Years Performing](image)

Fig. 4.6. Number of Years Performing, n=97.

Thirty-four of the survey participants have been performing 21-30 years. Thirty-six of the singers reported having performed for 31-40 years and twenty-five have forty or more years of performing experience.

Survey Question #7

*How many years have you been teaching?*

![Number of Years Teaching](image)

Fig. 4.7. Number of Years Teaching, n=95.
Survey Question #7 asked respondents to indicate how many years they have been teaching. Forty-eight women have been teaching less than twenty years and twenty-seven have been teaching for twenty-one to thirty years. A total of twenty women have been teaching for thirty-one to forty years and nearly 10% have had teaching careers spanning forty or more years.

The question which follows is of a particularly subjective nature. Participants were asked “During what age range do you believe your voice was at its best?” The researcher came into this study with the preconceived notion that most singers consider their best years of singing to be from the ages of 35-40. It was belief not based on data but an idea undoubtedly fostered during college. This open-ended question afforded each survey participant the opportunity to express her unique perspective. The descriptor “best” was intentionally left undefined. The term “vocal prime” was not used because it was believed to be too leading. Ninety-nine responses were received. If a non-numerical response like “now” or “currently” was given, the researcher returned to the individual’s survey response to Question #2 and used the participant’s current age range as a point of reference.

The figure which follows is a compilation of all the data points the singers provided in their answers. If, for example, a participant answered 31-40, one data point was added to each of the appropriate years on the horizontal axis. Of the ninety-nine women who responded to the question, two felt that their voices were at their best as early as age twenty-one. One participant in the 65-70 age range felt that her voice is still at its best. Because age information was gathered as an “age range,” we cannot know if the individual is on the low or high end of that age group. The number of women who reported that their voices were at their best by age thirty jumps to twenty nine. By age thirty-five nearly 50% of the women felt that their voices were at their best. This trend continues through age forty-nine, when we see the first significant drop in responses. It is of significant interest that by age fifty-one there is a marked drop in the number of women who felt that their voices were at their best. This dramatic shift correlates precisely with the current national average age of menopause, age 51.
Survey Question #8

During what age range do you believe your voice was at its best?

Fig. 4.8. Respondents Report of Voice at its “Best” by Chronological Age, n=99.

Any preconceived notion that a professional singer’s voice is at its best only between the ages of 35 and 45 has clearly been challenged by this group of professional female singers. Most singers reported an extended length of “best singing,” much beyond a ten-year window.

Several enlightening comments were offered by the respondents.

1. Now – 47+.
2. It started with 48 and still going right now (50).
3. Between 42 to 52, but I am still singing well.
4. Now at 59.
5. I am 58 years old and am still enjoying a very responsive instrument.
6. Age 46 thru 54. (I’m 54 right now).
7. Mid 30s to mid 40s—each decade has different strengths.
8. Now – 49, my career has just taken off, finally.

While two women in the 71+ age range reported the forties as the years they felt their voice was at its best, others listed ranges spanning over twenty-five years. The other four participants in the 71+ age group reported that their voices were at their best between the ages of: 35-65, 35-50, 30-58, and 55-65. The potential to continue a performing or teaching career well into one’s fifth and sixth decade clearly exists.

Survey Question #9 asked respondents to indicate how often they performed six different genres of vocal music. The question was completed by 100% of respondents to some greater or lesser degree. It is important to note that some participants neglected to select/utilize the “Not Applicable” option which was provided for each genre. This is especially true of the Cabaret/Jazz category for which there were only eight-eight responses. The figure reflects all the survey responses given for each genre.

Opera was the most widely-performed genre among the respondents, with sixty-nine women reporting having frequently performed the genre during their careers. More than 50% of participants reported performing art song and oratorio repertoire frequently during their careers. Of the eighty-eight women who completed the cabaret/jazz component, thirty-four indicated “not applicable.” Of the ninety-five women who reported performing music theatre, sixteen performed it frequently, with twenty responding “not applicable.”

The frequency and variety of genres performed among this group of artists reflects the performance opportunities prevalent in the twentieth century. Research in the future will be warranted to document the frequency of performances for each genre in the twenty-first century.
Survey Question #9
How frequently did you perform the following genre during your career?

Fig.4.9. Frequency of Performances by Genre, n=100.

In Survey Question #10 respondents were asked to indicate whether or not they have made a change to their repertoire during their career. While 64% of participants reported that no significant change was made to their repertoire during the course of their career, 24% reported that they transitioned to lower repertoire, and 13% reported a transition to higher repertoire. Respondents shared some of the reasons they made a change in repertoire during their career in Chapter Five. Additional information specific to when the change occurred or what prompted the transition was not requested during the survey.
Survey Question #10

Did you make any significant changes to your repertoire during the course of your singing career?

![Repertoire Changes Chart]

Fig.4.10. Repertoire Changes, n=100.

Because no age data was collected relative to the timing of the reported change in repertoire, a direct correlation to a specific event, illness, or change in hormonal status, for example, cannot be established.

This concludes the Background portion of The Professional Female Singer and Career Longevity Survey.

4.2 Survey Section II: Hormone Use and Health Issues

The second portion of the Professional Female Singer and Career Longevity Survey included a number of questions related to reproduction, contraception, hormone replacement therapy use, and other health events. The first question was designed to establish the participant’s current hormonal status.
Survey Question #11

Which of the following best describes your current hormonal status?

![Current Hormonal Status](image)

Fig.4.11. Current Hormonal Status, n=100.

Three options were presented and defined as follows: Pre-menopausal (the phase in a woman’s reproductive life when menstrual periods still occur on a regular basis), Perimenopausal (the phase of reproductive life when the monthly cycle becomes erratic with missed periods and hormonal imbalance), and Postmenopausal (distinguished by one full year or more since the last menstruation). In medical terms it is important to note that only the day which marks the twelfth consecutive month without menses is considered the moment of “menopause.” Life past that moment is properly identified as postmenopause. In the survey twelve women reported being premenopausal, eighteen indicated a status of perimenopausal, and seventy-two now consider themselves to be postmenopausal.

It is has long been recognized that to have a successful vocal career a professional singer can anticipate devoting many years of hard work and complete dedication to vocal development, language and repertoire study, etc. The choice to have children or forego having a family for the sake of a career is one which many female singers will have to make during their careers.
Survey Question #12

*Have you had children?*

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-50</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>51-55</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>56-60</td>
<td>12</td>
<td>6</td>
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<td>61-65</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>66-70</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>71</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Fig. 4.12. Childbirth by Age Range, n=100.**

Figure 4.12 compares responses to Survey Question #12 (*Have you had children?*) with the respondents’ age ranges. Fifty-three women reported having children. The data shows that more women in the 45-50 range and 56-60 range did not have children. Additional research would be needed to determine what personal or sociological factors impacted the 47 participants who did not have children. The choice to have children and a career can be challenging for any woman. Singers have the added challenge of working around performance schedules. As one singer reported “You just didn’t have kids if you wanted to have a career. Opera companies and managers frowned upon having a personal life. We didn’t even wear our wedding bands to auditions for fear that we would be looked over. My teacher, who was married with children, even advised against wearing the ring to rehearsals.”

Survey Question #13 asked respondents about their use of oral contraceptives. Of the 99 participants who completed the question, seventy-one answered in the affirmative. The remaining twenty-eight did not take oral contraceptives. Several phone interview participants were asked about their experience with oral contraceptives. They reported taking contraceptives in their early twenties primarily to regulate their monthly cycle. Few could recollect any direct vocal benefit because they were in the early stages of vocal development at the time. Several
women acknowledged the benefit to having a predictable menstrual cycle during the years they were actively pursuing their performing careers.

Survey Question #13

_Have you ever taken oral contraceptives?_

![Oral Contraceptive Use](image)

Fig. 4.13. Oral Contraceptive Use, n=99.

Question #14

_Are you currently or were you previously on Hormone Replacement Therapy?_

![Hormone Replacement Therapy](image)

Fig. 4.14. Hormone Replacement Therapy Use, n=90.
Figure 4.14 shows hormone replacement use among peri- and postmenopausal survey participants. Forty-one percent of participants are currently or have previously used hormone replacement therapy. Fifty-nine percent of participants have not taken HRTs. No additional information on when or why the participants took HRTs was requested in the survey.

The next two questions in the survey asked participants to share information on two very personal health issues. Issues of this nature are often not openly discussed. Any perception that singers are unable to perform or teach could have a significant negative impact on their career. The first question was about the diagnosis of a vocal issue and the second concerned the diagnosis of cancer or other life-changing illness. The terms “vocal crisis” and “life-threatening disease” were avoided. This was done specifically to remove any overly negative connotation.

Of the ninety-five participants who completed Survey Question #15 (Have you ever been diagnosed with any of the following vocal issues?), seventy-one respondents selected “none of the above.” The data reveals that twenty-four of the artists in this study have dealt with vocal issues at some point in their careers.

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Response Percent</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyst or Polyp</td>
<td>6.3%</td>
<td>6</td>
</tr>
<tr>
<td>Dysphonia</td>
<td>3.2%</td>
<td>3</td>
</tr>
<tr>
<td>Granuloma or Nodule</td>
<td>9.5%</td>
<td>9</td>
</tr>
<tr>
<td>Vocal Hemorrhage</td>
<td>15.8%</td>
<td>15</td>
</tr>
<tr>
<td>None of the above</td>
<td>74.7%</td>
<td>71</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**answered question** 95

**skipped question** 5

<table>
<thead>
<tr>
<th>Number</th>
<th>Other (please specify)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Varices on the vocal cords</td>
</tr>
<tr>
<td>2</td>
<td>Swelling of the cords at a blood vessel/ cords only closed partially</td>
</tr>
<tr>
<td>3</td>
<td>Irritation due to gastric reflux and bronchiectasis (mild)</td>
</tr>
<tr>
<td>4</td>
<td>Severe laryngitis due to excess mucus on vocal folds</td>
</tr>
<tr>
<td>5</td>
<td>Thank God, never any issues aside from illness</td>
</tr>
<tr>
<td>6</td>
<td>Swollen cords on occasion due to laryngitis - either with a virus or from overuse</td>
</tr>
<tr>
<td>7</td>
<td>Superior laryngeal nerve impairment</td>
</tr>
<tr>
<td>8</td>
<td>I also had thyroid surgery and had a scary and difficult recovery.</td>
</tr>
<tr>
<td>9</td>
<td>Reflux</td>
</tr>
<tr>
<td>10</td>
<td>Could not sing at all for almost 6 years after having my first child.</td>
</tr>
<tr>
<td>11</td>
<td>Soft node that disappeared w/ speech therapy</td>
</tr>
<tr>
<td>12</td>
<td>Laryngeal acid reflux</td>
</tr>
</tbody>
</table>

Fig. 4.15. Vocal Issues, n=95.
The most frequently reported vocal issue was vocal hemorrhage. Fifteen percent of the singers reported having experienced a hemorrhage at some point in their careers. Nine women developed a granuloma or nodule during their career. Six reported having a cyst or polyp and three of the singers reported experiencing dysphonia. The comments offered in the “other” category give an indication of the variety of other potential problems which can arise, including reflux and post-surgical trauma. The relative ease with which a voice injury can occur was expressed by a number of singers who participated in the phone interviews. Several participants reflect on their treatment and share recommendations for avoiding injury in Chapter Five.

Survey Question #16

*Have you ever been diagnosed with cancer or other life changing illness?*

![Cancer or Other Life Changing Illness Diagnosis](image)

Fig. 4.16. Cancer or Other Life Changing Illness Diagnosis, n=100.

Survey Question #16 gathered data on the incident rate of cancer or other life changing illness diagnoses among this group of professional singers. Of the 100 women who completed the question, eighteen have been diagnosed with cancer or another life changing illness. The relatively high percentage of positive responses might, at first glance, be alarming to some readers. The researcher spoke with several cancer survivors who reported very positive treatment outcomes. Their reflections on singing through cancer can be found in Chapter Five.
4.3 Survey Section III: Performing and Teaching

The third portion of the survey contained six questions related to career influences, approaches to maintaining the voice, the perceived benefit of teaching, and choices affecting the decision to retire from performing and teaching. In Survey Question #17 the participants were asked to indicate the level of influence a voice teacher, coach/accompanist, conductor/composer, management, a patron, and family or friends had on their career success. One hundred percent of respondents completed the question to some degree. Eighty-two participants cited their voice teachers as the most significant influence or greatest contributor to career longevity. The second greatest influence was a coach/accompanist. A conductor or composer was rated as a major influence for thirty women. Family and friends were ranked the next most significant influence on a career. Management had a significant impact on fifteen of the participants. Over 50% of participants reported that management had only a moderate to minor influence on their careers. Fifty-six percent of the women indicated that a patron had no influence on their careers.

Survey Question #17

*How significantly did the following influence/contribute to your career success?*

<table>
<thead>
<tr>
<th>Answer Options</th>
<th>Major Influence</th>
<th>Moderate Influence</th>
<th>Minor Influence</th>
<th>N/A</th>
<th>Rating Average</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Teacher</td>
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<td>12</td>
<td>4</td>
<td>2</td>
<td>2.80</td>
<td>100</td>
</tr>
<tr>
<td>Coach/Accompanist</td>
<td>46</td>
<td>35</td>
<td>12</td>
<td>5</td>
<td>2.37</td>
<td>98</td>
</tr>
<tr>
<td>Conductor/Composer</td>
<td>30</td>
<td>31</td>
<td>30</td>
<td>8</td>
<td>2.00</td>
<td>99</td>
</tr>
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<td>1.48</td>
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<td>26</td>
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<td>100</td>
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<td>Friends</td>
<td>27</td>
<td>35</td>
<td>31</td>
<td>5</td>
<td>1.96</td>
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</table>

*answered question 100  skipped question 0*

Fig. 4.17. Influences on Career Success, n=100.
Survey Question #18

Which of the following best describes your approach to maintaining your voice?

![Approach to Vocal Maintenance](image)

Survey Question #18 shows the variety of approaches seasoned professional female singers use to maintain their voices. Seventeen percent of women preferred to save their voices and only sing as needed to prepare for a performance. Forty percent felt that singing while teaching kept them in shape. The greatest percentage felt that they had to sing daily to stay in shape.

The following responses offer additional recommendations for maintaining the voice:

1. I also practice for upcoming performances.

2. I practice what I preach, sing/demonstrate while teaching, when performing, and preparing for performances. Rehearse/practice well. Not daily, but enough to give myself the physical and vocal flexibility.

3. I warm up always before teaching. Do not demonstrate a lot in teaching so that the students work from their own feedback and take a day of vocal rest. I do not teach when I am in opera rehearsals.

4. Just beginning teaching. I can (again) sing two to three times a week without losing conditioning. During the past twelve months that was not always true, as I reworked my technique to accommodate menopausal changes. I had to work daily (or even more often) to retrain muscle responses.

5. I carefully work on a steady pace for 3-4 weeks to prepare for performances of mostly oratorio or symphonic work now.
6. I know I would sing better if I practiced daily but tend to practice consistently only when preparing for a performance.
7. As well as additional practice for more specific repertoire requirements.
8. Staying in good physical shape is key to my preparation for singing.
9. Now I need to sing more often to stay in shape.
10. I am performing most of the time.
11. When I'm performing a lot, I vocalize right before I sing (hours before), otherwise, I vocalize every couple days.
12. I vocalize before teaching in order for my voice to stay in shape.
13. I also continue to vocalize.
14. My life (at this particular moment) does not allow me to vocalize or practice every single day, so I work on my instrument fairly frequently. Earlier in my career I worked on my voice every single day.
15. I only practice when I have time as I am no longer singing professionally.
16. A combination of the first and third selections [I have to sing daily to stay in shape and I prefer to save my voice and sing only as needed to prepare for a performance.]
17. Healthy lifestyle and diet, good technique, sing often and while teaching, but not too much.
18. My singing/practicing has been more sporadic the last two years due to my new position as chair of the opera department along with teaching
19. I have to sing at least 2-3 days a week to stay in shape.
20. I increase the frequency of my singing to prepare for performances.
21. When preparing for a job, I sing every day. I sing daily during the gig. If I have back to back gigs, I sing a lot to stay in shape, but when I don't have time off, I try to give myself a break.
22. I am certainly noticing changes in the voice – though I still have my range.
23. Teaching does keep me in shape somewhat, and while I do not practice daily, I practice and coach when I have singing engagements pending which is pretty frequently.
24. I've retired due to illness.
25. I have not always practiced regularly, but as I have gotten older I have tried to develop more routine practice habits.
26. I also sing to prepare for performances
27. I still perform a fair amount, but find it difficult to maintain a practice routine when I don't have something coming up.
28. I am pretty reckless with my voice while teaching in demonstrating for tenors and baritones.
29. Sing rarely now, except when demonstrating something, infrequently.
30. I sing several times a week with a choir, but always vocalize before solo performances.
31. I feel that it would be better to sing the music I'm performing more often.
32. I practice 3-4 times a week, and model while teaching voice lessons which keeps me mindful of my own technique.
33. I try to stay physically fit and get enough sleep and water, because I have never had a regular practice routine. This is in appearance a bit like your last option, but it's not a preference to "save" my voice. It's simply that I have other things I'd rather be doing than practicing. I wouldn't recommend it to anyone!
34. Also try to vocalize and sing repertoire two to three times a week.
35. With extra practice before performances.

The responses above give an idea of the many different approaches singers take to maintaining their voices. Finding time and/or the motivation to practice on a daily basis was clearly a challenge for many of the professional singers in this study. Notice the number of singers who stress the importance of staying physically fit.

Survey Question #19
In your opinion, has teaching helped you maintain your voice?

<table>
<thead>
<tr>
<th>Benefit of Teaching on Maintaining the Voice</th>
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</thead>
<tbody>
<tr>
<td><img src="image.png" alt="Pie Chart" /></td>
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</tbody>
</table>

Fig.4.19. Benefit of Teaching on Maintaining the Voice, n=100.
More than 50% of singers reported that teaching was “Very Beneficial” in helping to maintain their voices, with an additional twenty-eight percent indicating that teaching was “Somewhat Beneficial.” Only 6% of the respondents felt that teaching was not beneficial for maintaining their voices.

**Survey Question #20**

*If you are no longer actively performing how did the following factors impact your decision?*

<table>
<thead>
<tr>
<th>Factors Influencing Retirement from Performing</th>
<th>Significant Impact</th>
<th>Moderate Impact</th>
<th>Little Impact</th>
<th>No Impact</th>
<th>Not Applicable</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
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<td>3</td>
<td>3</td>
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<td>Family Obligations</td>
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<td>5</td>
<td>5</td>
<td>8</td>
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<td>75</td>
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<tr>
<td>Finances</td>
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<td>6</td>
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<tr>
<td>Health Issues</td>
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<td>4</td>
<td>7</td>
<td>13</td>
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<td>77</td>
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<tr>
<td>Lack of Performing Opportunities</td>
<td>15</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>41</td>
<td>77</td>
</tr>
</tbody>
</table>

answered question 78 skipped question 22

This question was completed by seventy-eight participants. Lack of performing opportunities was cited as the most significant factor influencing the decision to retire from performing. Career change had some impact on 21 of the participants, family obligations impacted 19 of the women, finances affected 20 and health issues impacted 19 of the participants.

Survey Question #21 asked participants to report what factors they felt influenced their decision to retire from teaching. Two individuals cited “Career Change” as having a significant impact on their decision. A majority of participants selected the “not applicable” option or skipped the question, suggesting that most are still actively teaching.
Survey Question #21

*If you have retired from teaching how did the following factors impact your decision?*

<table>
<thead>
<tr>
<th>Factors Influencing Retirement from Teaching</th>
<th>Significant Impact</th>
<th>Moderate Impact</th>
<th>Little Impact</th>
<th>No Impact</th>
<th>Not Applicable</th>
<th>Response Count</th>
</tr>
</thead>
<tbody>
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<td>Family Obligations</td>
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</tr>
<tr>
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<td>67</td>
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<tr>
<td>Asked to retire from college/university position</td>
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<td>67</td>
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<tr>
<td>Reached retirement age</td>
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<td>0</td>
<td>0</td>
<td>1</td>
<td>66</td>
<td>67</td>
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</table>

Fig. 4.21. Factors Influencing Retirement from Teaching, n=67.

Survey Question #22 contains a dynamic array of information on the types of choices singers make with regard to diet, exercise, lifestyle, and training, which they believe helped preserve their voices and contribute to their career longevity. The responses below are unedited, and appear in their entirety. Many comments focus on refraining from alcohol, avoiding smoke and smoky environments as well as other common sense recommendations e.g., getting adequate sleep and noise avoidance. A number of singers stressed the importance of continuing to study with a voice teacher and learning to say “No” to inappropriate repertoire.

Survey Question #22

*What sacrifices did you make that you believe preserved your voice and contributed to your career longevity?*

**Responses to Survey Question #22 by Respondent Number**

1. I would characterize the following as choices, not necessarily sacrifices: 1) Since I sang very little opera, I did not use many vocal miles singing over loud orchestras. 2) I never gave in to the temptation to push my voice beyond what felt like my personal maximum.

2. I am not sure that I made any significant sacrifices unless one considers the decision not to have children a sacrifice. That decision on my part was not made for my singing career but rather was a joint decision with my husband based more upon our financial situation and desired lifestyle. I think that my ability to continue singing well is more a reflection of good technique and also that the major part of my career started later, in my mid-forties, after I made a *Fach*
switch to Wagnerian and dramatic soprano repertoire. The fact that I didn't sing this heavy repertoire until I was older I think really preserved my voice.

3. Drinking only moderately, singing repertoire appropriate to my Fach, working with a voice teacher through about age forty-eight.

4. No late nights, plenty of sleep, moderation in alcohol.

6. I put off having a child, because I am very easily distracted. I am not as social as I might have otherwise been, because I talk too much when I'm out with people. I know I would go out dancing or listening to music in clubs more while on the road, but those are situations that tend to be loud and/or smoky, which I find extremely taxing. That said, there are always plenty of other singers in the same boat, so we can gather in each other's apartments and such and socialize that way. I also have had to stay away from much outdoor activity in the winter. I am very prone to upper respiratory infections, which are exasperated by exertion in the cold. There were jobs I passed on as well that I thought would have been potentially hazardous to my vocal health. So I guess I sacrificed plenty of money in the process. Re: Question 20, above: I am still active as a performer, but I have significantly reduced my participation because it would have felt like too much of a sacrifice of parenting time if I'd kept my same schedule once my son was in school. I opted against that particular sacrifice, but only after I'd already been working for 15 years.

7. I was careful in which roles I accepted. And while it was not necessarily a choice, my career was not at the level where I was traveling constantly, so I did have periods of rest. I was also fortunate in that I rarely was sick while singing. The aforementioned reflux began in my late forties, and is really what began to take the toll on my instrument.

9. I decided not to teach grade school music.

10. Being careful what I eat close to a performance – avoiding foods that may cause/create mucus. Also, avoiding alcohol while preparing for performances. Not smoking – anything. Avoiding loud bars, etc. Avoiding smoky restaurants, rooms, etc. Saying "no" to late night parties, etc. pre-performance.

11. No sacrifices.

12. None.

13. I trained my body in the same way that a professional athlete does. I found I had an extraordinary list of allergies. I carried syringes & serums around the world with me for about six years. I constrained my diet to those things to which I was not allergic, vegetable and protein. I was a slender opera singer. I did yoga every day which increased my breath control and made me a far better singing actor. I maintained my vocal technique until the very last show I did – costly, but makes one a better singer. Honing your craft never ends. Since my travel and performance schedule was so heavy, it was very difficult to maintain relationships or marriage. Experiencing intense burnout (I began modeling at five and was on stage by age 10) I needed to rethink my purpose. In becoming a life coach I have helped myself and others to achieve a better
life balance. I have written many articles for Classical Singer on ending a career, in 2009 or 2010. I am a speaker and professor, and have just finished a book which will be out in February 2012 which I will be presenting for NATS. The book is entitled: Harness Your ZEBRA: Career Design and Power Performance for the Emerging Performing Artist.

14. I don't consider the following as “sacrifices,” rather important practices and lifestyle choices. This information may be specifically requested later in the survey. I tailored my nutrition and diet to minimize allergy symptoms and travel stress. Little to no alcohol or caffeine consumption. Absolutely no recreational drugs or smoking ever. Kept physical fitness a priority throughout [my career]. Balanced emotional health. Minimal loud talking in social environments.

15. Chose to work on career first, married later in life, children later in life.

16. I never touched alcohol, and I rested my voice as much as I practiced. I have terrible allergies, and spent most of my life singing in moldy, dusty old opera houses. That took a lot of discipline and knowledge of current medications, and holistic approaches to keeping my instrument healthy in difficult situations. I am a very social person, and making sure I had enough vocal rest (for a larger instrument as well) meant having to say no to certain social engagements...when all I really wanted to do was play with my new fun colleagues. I got my time in somehow...but needed to be aware of how much I was speaking...changed my natural laugh to avoid the vocal collision it brought! etc. Excellent question.

17. I believe a singer always sacrifices financially during a career to keep their voice healthy and in peak shape. Many times you don't have the money for the voice lessons or coachings but yet you give up other things to somehow find the money to accomplish these things.

18. I always did and still do take good care of my instrument both in use and by caring for my overall health. I slept when friends were out carousing. As a frequent musical theater performer I never once ventured into roles requiring belt although that would most certainly have helped my career in that field. I preferred to keep my voice as beautiful as possible.

19. Staying involved in performances i.e., summer workshops, summer stock, having had a steady church job for 40 years (since college) without a break!!! (although I loved every minute and continue to do so.) My family was very understanding when I had to go away for workshops and performances.

20. None. Having a family basically stopped my career in mid-stride because of total dysphonia after my first C-section. During that time I had to start teaching because of financial considerations. I didn't sing at all from age 32-37, and then slowly had to re-learn how to phonate and sing in public. I'm now 55 and when I practice regularly I am fairly happy with the tone. I had an unplanned hysterectomy when I was 48, but I don't think that affected my singing—although I am still on hormone therapy. I do believe that being a low voice person has been an advantage for me, because I am still "right" for character mezzo roles and for oratorio. I definitely don't sound young any more, but when I can carve out time from university teaching and family to really practice and prepare for a performance, I believe I am still viable professionally, and I do continue to be hired locally, especially for oratorio. I plan to continue to
sing until I get negative feedback from colleagues I trust or until I can hear a change in my voice that I consider no longer acceptable for public performance.

21. I believe my voice type, lyric mezzo, has allowed me to continue to move into more character roles than other voice types would have. I have to choose them carefully re: tessitura though. I no longer sing coloratura mezzo roles as most singers my age lose that flexibility and I have lost the accuracy. I think teaching has had a very strong influence on my ability to continue singing for 30 years. What you tell students each day about breath and position and musical issues is reinforced. Oddly enough, this year I took on a role that was the first role I had been contracted to sing 30 years ago—Despina for a summer contract. It was interesting in that the Italian recit. took longer to keep in my head, though the music was so ingrained. I am not sure I made sacrifices—although one has to have a family that supports the career. I think I was instead very lucky to have a supportive singer spouse and fantastic teacher/coaches who guided me and told me the truth at every turn.

22. None—no sacrifices.

23. I gave up opportunities to teach in public schools and earn a better salary. I refused opportunities to sing in choirs and other singing venues that put a strain on my voice, regardless of the money involved. I took jobs that did not involve music to make a living, but where I did not have to use and abuse my voice.


27. Maintained a healthy lifestyle including well-balanced diet, exercise, and lots of rest. Serious attention to schedule. Careful to stay rested as much as possible. Disciplined about solid vocal technique. I started to turn down gigs around 38-41, as they were no longer satisfying and/or lucrative.

28. I was not a professional performer but was a choirmaster/organist, a coach/accompanist, and musical theatre music director who became a voice teacher in 1981. I am still a full-time voice teacher at age 71 with a private studio. For fifteen years I sang first soprano in my church choir singing cathedral style music. (My voice became soprano in my late 20s thanks to studying with a fine teacher at FSU). I switched to second soprano five years ago, but last year could no longer sing the high tessitura which is required by this style, so retired from the choir. The alto part lay in my lower passaggio and was uncomfortable. I continue to demonstrate as I teach and my voice works fine up to high f or g. Constant vocalizing has kept my voice in good shape for my age as has my evolving approach to freer vocal production.

29. I knew to stop or mark when I was getting tired—not a sacrifice but a necessity. I sacrificed time with my son and spouse though all was fine. Never traveled, except to work. Did not drink. Slept a lot.

30. I have not had a big performing career, although I have performed continuously since I was in school. I have taught at the college level for about thirty-five years, and full-time for about twenty-five years. This has been my primary profession. However, I believe that by continuing
to perform, I have enhanced my teaching. My longevity as both a teacher and a performer were enhanced by my willingness to forgo a more lucrative profession, financially. It has been worth it.

31. I don't know if I would call it a sacrifice, but I am careful about taking care of myself, watching my weight, eating well, and exercising regularly.

32. I don't think of my choices as sacrifices. The fact is that I didn't marry or have children. But, it didn't seem like a sacrifice to me. I was very lucky to have a voice that was always healthy. I was always careful to spend the night before every performance alone and quiet. And always quiet all day on a performance day. My career did become largely European during the last ten years of performing and that became increasingly difficult. It just was too long to be away from family and friends. And much too far away; I missed many, many Christmases with my family. But, as far as career longevity in my case, it was a combination of good management and consistent singing.

33. Periods of rest and silence.

34. I turned down many roles early in my career. I was patient before tackling the heavier repertoire like the Verdi, Strauss, and Wagner roles that I sing today, at age 52. I also always tried to give myself small breaks between gigs and performances for ample rest, especially if the repertoire was on the heavier side. I always took very good care of my instrument in terms of hydration, foods, and dietary issues, and proper rest to insure a long and prosperous career.

35. I rarely drink or "party." Sleep is crucial. I don't speak above noise. I also have worked hard to keep my head and heart in a good place and have focused on the importance of the music.

36. I am not a smoker. I watched very carefully what I ate and drank before performing. I warmed up daily, either on my own or in demonstration in the studio. I believe I could have performed for a few more years after I decided at 60 to retire from it, and indeed did feel somewhat lost without that outlet. However, now I have taken on some adult students, among them two ladies over 60, and the success I have seen in them gives me great pleasure.


38. Not sure that I would use the word "sacrifice." Particularly in the early part of my career, I made certain choices. These were mostly personal choices, either was not able or chose not to fly home to weddings, and missed other family functions, such as funerals (grandmother, uncle), etc. At the time, I felt like I didn't have a choice, as I was in Europe, but in hindsight, I realize that I made the choice.

39. After making a few mistakes, thinking that I had to do what others expected of me, I learned to say, “No!”

40. I made a conscious effort to keep a balance of opera, concert, recording, and recital early in my career. I usually do one or two opera productions a year, 10-15 recitals a year and the rest of
my season consists of concert repertoire. I try to keep the back-to-back engagements to a minimum, especially if long, international flights are involved. I have found now that I'm in my 50’s, I need more time in between engagements. If I do master classes after recitals, I try to make sure that I have maybe a day between the recital and the master class, or at least do the class late in the afternoon or the evening of the next day. I think because of keeping a consistent amount of concert repertoire in my schedule, this has kept my voice healthy.

41. I didn't perform non-stop so that I could have valuable family time. This meant that I never had to push my voice or my body too hard. I always gave myself "vocal holidays" during the year, so that I was able to recharge.

42. Sacrifices? I feel I was lucky enough to find a responsible and highly-skilled voice teacher who taught me a solid vocal technique and vocal health habits that have served me well for thirty-seven years.

43. Taking time off work to rest voice.

44. My primary career focus has been teaching choral music, and the sacrifices that I simply had to make involved my stopping the constant singing with my students. Though I never had serious vocal health problems, I was headed for trouble for about ten years of over-singing to help kids improve more quickly. I simply had to stop and this required that I re-think my entire approach to teaching.

45. I do not smoke or drink much, except for beer, which actually helps...Guiness.

46. None.

48. I think that in fact, not sacrificing jobs due to illness contributed greatly to the shortening of my career. Specifically being requested to stretch myself thinner than I would have normally done by a famous conductor at the Met then led me to exhaustion and illness on the next job (Paris) which I didn't feel I could cancel, although I had an extreme case of bronchitis. Upon finishing this job, I found myself totally out of vocal balance and still went on to Philly where I sang an Aida at less than my optimal—which finally led me to canceling the next two months of work. The following job (Santa Fe) suffered from all of the above. Money was a great factor in deciding to keep singing—but far more important to me was the opportunities that I would have to have given up to sing in new places. Those were, in hindsight, absolutely hurtful to my vocal health. The "strike while the iron is hot" was ruling me at the moment.

49. A lot of down time trying to be quiet around performances. No talking/chatting on airplanes. Not much partying.

50. I learned how to survive in group settings in order to maintain my personal health. Rest, only go out when it was timed appropriately. I understand the necessities of good vocal health and practice those ALWAYS... I did not mentally beat myself up about separation from family. I was able to have successes that were well-organized and done with preparation. Sacrifices? Not sure – at times extreme dieting was due. I have had a fair amount of stage injuries which have
derailed my performing from time to time, but worked through them and understood on the other side what contributed to them. Learn from your mistakes. Keep your eyes open. I have a curious mind which is always wanting to find the more exquisite way to perceive or perform music. What is it that makes something truly outstanding? I was taught a solid technique and it has been my rock in times of travel, stress, rehearsal, and hormonal changes. So far, so good. The sacrifices I've made have been time with my family. I can't say that has contributed to career longevity or shortened [the career] [sic] not a factor. I've lived reasonably and intelligently, knowing my strengths and believing in what I do has been the strongest tool.

51. I have never yet taught full-time tenure-track as I tend to over-commit and devote a disproportionate amount of time/energy to teaching and less to singing myself. With still traveling to sing/perform, it is difficult to maintain a full studio that meets regularly.

52. The only thing that I chose to do that I think helped me to continue singing was to resist offers of roles that were too high for me when so many people heard my voice as appropriate for them. Forcing my voice into higher tessitura–and I have done it on occasion–never was a good idea. As a side note: I had two vocal bleeds during my career, both of which were related to dryness. The first was when I was on a medication 20 years ago that was very drying while I was trying to quickly prepare a recital. This was also the year I had my daughter. The second happened last spring during a very stressful time in my life. My mother had a massive stroke. As a result I arrived late to a job—a new work, which was bombastic and has a higher tessitura, and I sang much too long daily and in very stressful and dry conditions.

54. Tough to answer, but I've been careful to not overbook myself. If I have a concert, I don't teach, and do make-ups later. I restrict the amount of adjudicating I do, and when I travel, I do my best to give myself recovery time. Things have not always been easy for me, but my career has been primarily teaching and concert work. In recent years, I've done more opera than I did mid-career, and my voice has seemingly responded to the care I've given it. That is not to say that I've done everything right. I probably made all of the mistakes a singer could make at least once. Shall we say, I learned from my mistakes instead of repeating them.

55. I have suffered from asthma and allergies my whole singing life. Recently I have had to make the decision to "breathe or sing." I choose to sing which may possibly shorten my personal longevity, but elongate my singing career. I took Advair, an inhaled steroid for about three years and nearly lost vocal control and my 20+ year opera chorus singing career. I felt great and never needed a rescue inhaler but almost damaged my voice permanently. I just recently stopped taking Flonase and feel that I am gaining back the last 10% of control that was lacking. I also did alternative allergies treatments with a chiropractor - NAET, (Nambudriped's Allergies Elimination Technique). It seemed to alleviate many allergy symptoms. I would get sick and lose my voice each spring and fall but after those treatments I didn't get sick for two years. If I was a solo singer I don't think I would have had children. I have two. I never would have animals that I am allergic to or dust collectors in my house. That would be a great personal sacrifice. As a career chorister, I felt I could deal with those things. Not that it's easier, it's just different. Soloists are long distance runners, choristers are sprinters who need strength and endurance to be able to sing in different styles and lengths and tessituras every night. So I guess I sacrificed a
possible solo career. Now I am sacrificing breathing health to maintain singing health and a choral career. Although you need to breathe to sing, in a chorus, you can breathe more often.

56. I don't think I made any sacrifices to preserve my voice, unless one considers going on HRT to be a sacrifice. I made a conscious decision to go on HRT fifteen years ago to preserve my voice, but have decreased the dosage in the last three years by 2/3rds. I am still singing actively and I believe that good technique helps to keep my voice vital. It is certainly not the same as 10-20 years ago, but I believe the age factor contributed to less engagements than I had five years ago.

57. No smoking, no drinking, birth control pill to regulate hormones.

58. To be quite honest, I have not made any special sacrifices per se. I am not a smoker, nor am I a heavy drinker (although by no means do I abstain), and I have avoided singing repertoire that was too heavy, too soon. If anything, I have erred on the side of caution. I've basically simply lived a reasonably healthy life. It would have been nice to have had a second child, but my career had no influence on that.

59. I sacrificed a lot of work to stay home with my children which in turn preserved my voice.

61. I did not make any real sacrifices. My divorce and menopause helped to shorten my career, I believe. The absence of consistent "ears" or teachers over a period of ten years shortened my career longevity.

62. No sacrifices, per se.

63. I didn't give anything up because I was doing what I wanted to do.


66. Making sure I said, “Yes” to the right repertoire and a big “No” when asked to sing something too big, too low or too high. Repertoire that I sang earlier in my career that had a higher tessitura is now no longer a part of my rep.

67. Spend time each day singing.

68. Eliminated foods that caused sinus infections or reflux. Very little alcohol consumption. Minimal attendance at parties. Avoided speaking in noisy atmospheres. Daily nasal rinses. Vocal rest at various times in my career when needed. On occasion complete vocal rest for a number of weeks. Learning to mark in rehearsals.

70. I was very careful about the amount of talking I did during a period of performances. I rarely went to parties when I was doing a major opera role. I saved my voice between performances.
71. I ‘mark’ really, really well. In rehearsals for an opera production, I would always ‘mark’ (consistently in the correct octave) UNTIL we began running whole scenes, whole acts, and then the whole show, etc., and continue to sing out during production week in the theater, so as to pace myself, get accustomed to doing the whole show through without ‘saving voice’ in preparation for my voice, body and mind for actual performances. This way there were no 'surprises' to one's self, one's colleagues and one's conductor come time for opening night.

72. I chose to remain in the teaching profession with performing as a secondary pursuit for the past 14 years while parenting. I did little travel and maintained a relatively low-key lifestyle, close to home.

74. I don't drink alcohol much at all, and certainly not leading up to performances. I refrained from certain activities happening close to performance dates so that I can get the proper amount of sleep which is crucial for my singing. I refrain from being in loud places when I have singing coming up to save my speaking voice, and thus save my singing voice. I am very careful not to sing or talk too many hours in a day leading up to performances to save my voice. I have sometimes had to cancel teaching lessons, and thus lose income leading up to performances if I am sick and need to save my voice. I have turned down engagements and income from offers that would have had me singing repertoire that I do not think my voice is suited for to keep my voice healthy.

75. Very healthy lifestyle. Freedom to travel.

76. I do not view anything I did as a sacrifice. I WANTED to take care of my voice, and the only way to do that is to take care of your body. I spent money to travel in a reasonable manner, and always tried to arrive for an engagement a day early, particularly transatlantic travel. I spent money to stay in decent accommodations. I never drank any alcohol or coffee and I ate a healthy diet, which I cooked myself most of the time. I tried to exercise and rest well, especially around performance days. I ALWAYS learned my music well in advance of an engagement, and spent time working on the vocal issues prior to traveling to the engagement. I did not run around socializing when on an engagement, and did not shout or go to places where I had to shout, or talk alot such as loud restaurants, or any disco. I would go to a Dr. at the first sign of an illness.

77. I was never really required to sacrifice anything I did not willingly give up in order to be able to sing well. I was given a very good basis very early in life, by my grandmother who was a professional singer herself, and by my first teachers while I was in college. Thereafter, I have sought out and found other good teachers and coaches. Due to having a supportive husband, I did not have to go out and take every job I could get, nor take on a heavy load of students, so while this certainly limited my career possibilities, it has also enabled me to keep my voice fresh so that I am still singing professionally at age 75. I was never willing to sacrifice a happy family life for a big career, and I was rewarded by having a family that gave me the emotional support I needed in order to have my small career without feeling guilty about it. So I COULD say that I MAY have sacrificed the possibility of a bigger career, and that action MAY have contributed to preserving my voice, but since I seem to have lacked the ambition for such a life, who is to say? In the end, I think that in order to maintain longevity, one has to have good health, some intelligence and objectivity about the workings of one's instrument, and the willingness to
constantly subject oneself to the scrutiny, advice, and help of experts in the field, all of which may entail a certain amount of sacrifice in the areas of time and money.

78. I never pushed my voice beyond what it was capable of doing. I consider myself a "late bloomer" and the best training I received was AFTER I had already acquired three degrees in performance. Workshops with Richard Miller (nine years at our university!) taught me more about how to sing than any of the previous voice lessons I had taken. Teaching voice offered me the opportunity to strengthen my own vocal technique on a daily basis.

79. I am still actively performing and teaching, I think the sacrifices I have made as far as not travelling as much have really helped me maintain my longevity. I feel like if I had chosen to travel full time and not teach as well, I would have gotten tired of the life and quit a long time ago. It's difficult sometimes to turn down work, since I want to still be in the loop, but I know for my family and myself, taking on 3 jobs a year max is the right choice for me and my students.

80. I keep studying and working with coaches, otherwise I'd sing like a dog. $$$

81. Tried to schedule heavy repertoire every other day. Continued to study and coach. Tried to stay physically active. Yoga.

82. When I was in school at UNF, a jazz studies major/vocal jazz performance, I vocalized every single morning (on the way to school in the car), to a tape of my favorite vocal tape of a lesson....sometimes I'd try different vocal lesson tapes for different days, plus, was performing and having vocal lessons weekly. Also, I was required to stay healthy (esp. my voice), not to drink wine during the flu season (I wasn't drinking that much, anyway), eat healthy, drink lots of water, get plenty of sleep, not to raise my voice at all (even excitement) a day or two before a gig/performance and make sure my vocal placement was always in the "snog" as vocal teacher at UNF taught me. All thru my 5 years at UNF, my vocal teacher required that along with strengthening my voice, that I sing at least 1 art song a semester (along with my jazz vocal selection) and performed at the performance lab. Training classical increased my range and gave me a voice that was pure as could be, even though it was hard work. To sing in jazz and to scat, one must attempt to make the voice as elastic as can be. Many scales (minor, major, harmonic, descending 1/2 steps, 1 octave and ascending 1/2 steps, 1 octave, triads, major 9ths, 13ths, sharp 11ths, etc.), improved the ear, too! Actually, the more I perform the better. My voice improves as I sing more.

83. Not sacrifices, but I eat very well, have exercised (more and less) most of my life, do yoga, some meditation; am alone on the road, and therefore quite self-focused while singing.

84. I found a great medical/homeopathic doctor who helped me find supplements and other actions that helped me recover significantly from Environmental Illness/Allergies/ Chemical Sensitivity. I also had the great good fortune to be able to attend about eleven Performance and Pedagogy Workshops with Richard Miller of Oberlin College. These two very providential situations have allowed me to be teaching and singing at age 67. I also exercise and sometimes do a mild form of yoga. These were not really sacrifices, but certainly preserved my voice (it
went higher after I had all the dental amalgams removed from my mouth and increased my range to 2 1/2 octaves!) and contributed to my teaching and singing longevity.

85. Minimal socializing and alcohol consumption; no smoking or illegal drug use (although I can hardly consider those to be a sacrifice).

86. Risks with hormone replacement therapy, but benefits out-weigh the risks…

87. I did not take every role that was offered to me. When I lost my contract in Wiesbaden I went freelance, but I took less concerts to raise my son. I found a great function voice teacher (Eugene Rabine) and took his seminars and became a better singer and better teacher.

88. Life style, Good Health, good vocal technique.

89. In High school, an ambitious conductor wanted to produce Stravinsky's *Les Noces* – with high school students – assuming that I would sing the soprano lead. My voice teacher reviewed the score, its pages of high Bs, and said "Absolutely not, this is not right for you, you will hurt your voice." I told the conductor, she had to give up the project and never forgave me, gave me bad grades in theory and composition classes. All these years later I remain grateful to the teacher who looked out for me.

90. Don't feel I sacrificed at all - Unless you include less partying with friends at times. Didn't let myself sing for EVERY request when it was not a wise choice and that may have led to some conductors not 'rehiring' but I doubt they would have been pleased with result if I had chosen to sing their 'request'.

91. I think the main element to preserving my vocal longevity was the fact that I delayed my operatic career until I was in my late twenties and early thirties. I concentrated on Art Song up to that point and I was a "late bloomer" in pulling my vocal technique together. I had to really work at my technique to develop consistent growth and that was something that was predominant throughout my singing life. It did not come easy to me in the beginning. Also, I allowed for large breaks between jobs and I purposefully turned down repertoire that was inappropriate and too big for my sound.

92. I try very hard not to talk in loud places.

94. I didn't make any sacrifices to preserve my voice. I just kept singing.

95. I have used my voice very judiciously during my career. I believe having children and a family life that demanded a fair amount of my energies and attention while my children were growing up kept me from over using my voice and causing excessive fatigue and wear. I sang enough to keep in shape without overdoing it and ruining my vocal mechanism. I was also a much happier, focused singer because I had a wonderful support system to encourage and provide strength for my career through my husband and children. I did not sing as much as someone who did not have these responsibilities, but when I did sing I was psychologically supported for the endeavor.
96. The usual choices to be healthy, (not really a sacrifice, but more of a lifestyle choice.)

97. I made sure I had a solid vocal technique, one that involves the couple of things one can control - the space in which the physics of sound occur and managing breath. As a result my voice is always fresh, easily produced from top to bottom, consistent in quality. I don't have the vocal stamina to sing a whole role or recital right now, but if I did practice every day for a couple of months, I could easily step back into performing and my voice would still sound fresh, young and capable of telling a story. I am ever concerned that young singers today are not taking the time to get a solid vocal technique before they step out there to perform. And I am concerned with the quality of teaching today. And it is not just me that is saying this. Instead of finding where breath and sound actually do come together and focusing on and managing this, which is the core component of singing, most teaching today focuses on where resonance is being made and to then put sound there. Strange in my opinion. Resonance is the result of making a sound which happens in the voice box. If you are interested in learning more about me or my ideas on singing, please visit www.ariaready.net.

98. In my opinion, being a singer means making sacrifices that are so much a part of my life that I don't think that I can separate out any "sacrifice" but I never did anything - at least not for very long - that effected my voice negatively: drinking alcohol, smoking, going to loud parties, staying up late but also not neglecting regular exercise, healthy eating and rest. I suppose the biggest sacrifice is financial. Over the years, I have put out a lot of cash to do what I do. It was all worth it!

99. Eliminated Perfectionism, Restricted socializing, Allowing my voice to change repertoire every 5 to 7 years, Not hanging on to what had been working, Felt always risky.

100. Knowledge of vocal system, educated about how to treat the voice, excellent teachers who connected the biological understanding of the voice and vocal problems, and using all this experience to make healthy and wise life choices to keep the voice healthy.

4.4 Survey Section IV: Participant Follow-up

The final portion of the survey contained four primarily logistical questions: Survey Question #23 asked respondents if they would like to participate in a phone interview to further discuss their careers. Seventy-five singers agreed to participate as needed. The remaining twenty-five declined further participation in the project. Survey Question #24 was included to create an opportunity for participants to invite their friends and colleagues to take part in the survey. Twenty women referred additional women to the research project. The individuals were then sent the invitation email with a link to SurveyMonkey.com. Survey Question #25 gave participants an opportunity to indicate whether or not they would like to receive digital copies of
the survey results, the treatise or both documents. Twenty participants requested survey results, four requested the treatise, and sixty asked for copies of both documents.

The last question asked the participants to indicate their willingness to have their names published alongside their comments. Fifty-eight of 100 singers preferred to remain anonymous. The researcher greatly appreciates the participants’ willingness to have their names published. The Florida State University Human Subjects Policy protects the anonymity of all research participants. To uphold that policy, each participant has been assigned a respondent number (R).
CHAPTER FIVE

REFLECTIONS, CHOICES, AND CHALLENGES

Twenty-seven phone interviews were conducted in February and March 2012 to expand upon the data gathered in The Professional Female Singer and Career Longevity Survey. Seventy-five of the 100 survey respondents offered to participate in a phone interview as documented by Survey Question #23.

The following excerpts contain first-hand accounts of events which affected the participants during their careers including vocal issues, cancer, and menopause. Vocal hemorrhage was the most frequently reported vocal issue for the research participants. The following excerpts give an indication of just how easily a vocal hemorrhage can occur. The labeling system is as follows: AR=author, R6=Respondent 6.

AR: You mentioned on Question #15 that you had had a vocal hemorrhage at one point in your career. I was wondering when that might have happened, if you know what caused it, and what your treatment was?

R6: What caused it was a cold with a bad coughing fit, so I believe I coughed myself a hemorrhage.

AR: Were you in the middle of a performance?

R6: It was just before I was supposed to leave for a Beethoven Ninth. I knew I would be easily replaced, since, as you know, the mezzo just holds up a gown in the Beethoven Ninth. It was the only time I’ve cancelled a concert—the only in my whole career—there was just no way around it. I have worked around all kinds of colds and nonsense, but this one, there was just no way. I went to a [local] ENT and he did the scope, and showed me the hemorrhage. He wasn’t somebody who was used to using kid gloves on an opera singer, and so I wasn’t positive that he was careful enough with his recommendations, because, you know, everybody else that I knew who had been through such a thing had to go on strict vocal rest for six weeks or eight weeks, and not say a word. He said, “Hmmm, take it easy, but you don’t have to shut up or anything, you just have to take it easy.” It turned out he was absolutely right. I just took it easy for a month, tried not to yell, didn’t really sing, did a little humming occasionally, but didn’t sing, and you know, eventually it worked its way back. . . . I did do a follow-up visit and he said, “It’s healed up nicely. There’s no scar tissue. You’re fine.” That gave me the confidence to work back into a practice routine that would get me ready for my next singing job.
Respondent 46 recounts how aspirin and high altitude don’t mix.

R46: I was singing a concert up at about 10,000 feet. I have sung many times since then at even higher altitude without any incident, but I was struck with an altitude headache which can be very painful, even though I am acclimated to high altitude living in Denver. I took two aspirins. Everyone says, “Never take aspirin.” It is a truism that salicylic acid can thin your blood and make you more prone to hemorrhage. I was singing away . . . at the extreme of my range with an orchestra, very loud, very dramatic and I felt something twinge. I had problems for about a year following that incident which wasn’t an out and out vocal hemorrhage but it just threw a wrench into my vocal process at that time. I worked very hard to repair it and sing in a different way—and never take aspirin before a concert, especially at altitude.

AR: Did someone scope your throat right away?

R46: Yes. I had a concert out of town singing Mercedes in Carmen which is not typically a taxing role. I noticed that things were not working in the light mechanism, or the light voice. I could certainly sing loud and full and forcefully, but whenever I had to remove a lot of adduction to the cords and I was singing in a more supported pianissimo fashion my voice just stopped. It had never happened before, so I immediately went to the Wilber Gould Voice Lab in Denver. They ended up doing an endoscopy. They could do a functional scoping which means you can phonate while they are slowing down the folds so they can look at how they are touching, how they are moving instead of just with a mirror. . . . They looked at it and saw streaking on the cords which indicated the capillaries were agitated and the feeding capillaries that innervated the nerves and the blood flow. They said, “No problem, just rest and you’ll be fine.” What subsequently happened was that fluid stayed on my cords. I had some engagements that spring that were quite disappointing to me so I went back to my voice teacher. By this time anxiety had set in and fear and rage and disappointment—all those things emotionally that don’t affect your voice very well. . . . For a good six months we worked very, very slowly and carefully to rehabilitate these cords that were not responding. So I always count that as a big, big lesson in how to avoid getting into that place and if something happens, knowing who to seek help from and how to get it done. Some people would have probably said, “I’m done. It’s over. I’ve done a lot of things (in my career) so far. I don’t need to do anymore.”

The following is an excerpt from a phone interview conducted with Respondent 20, a mezzo-soprano who reported complete dysphonia following the birth of her first child at age 32.

R20: I totally lost my voice after having my first baby. I had sung through the pregnancy, then my blood pressure went up at about seven and a half months along. I had to go on bed rest until I had the baby, so I didn’t sing at all for the last six weeks. When my son was about three to four weeks old, I went over to the piano and thought, “Well, I need to try to sing,” and I couldn’t make any sound at all. All I had was my speaking voice and chest voice. I could sing up the scale to the primo passaggio fine in chest voice, and then nothing. I couldn’t even scream. . . . (Because the baby) was kind of oddly positioned, I ended up having a C section. I went back to the doctor when [the baby] was about a month old, and said, “Help! What do I do? I can’t sing,” and he said, “I don’t have a clue.” He sent me to a local throat doctor who looked at my cords and said, “I don’t see anything wrong with your cords at all.” He got me to try to
make sounds, and said, “I can tell that you can’t sing at all, or you can’t make a pitch; it’s just total dysphonia.” He suggested that I stop breast feeding, because he thought it might be hormonal, and so I did.

I cancelled all [my contracts] because I didn’t know if I could do it. My agent got really upset. I went to a specialist, who looked at me and said, “When you get up to where the voice should shift into a mix, your vocal folds stop vibrating in sync, and they separate. One vibrates or moves at a speed faster than the other one, so there’s no way that you can phonate, because the cords aren’t working.” He said, “I can tell that you’re using breath. It’s not that your airflow is stopping or anything, but there’s just something wrong and not happening.” So, I went on up to see Sataloff (in Philadelphia) and stayed for a week. I had every test known to man. I had a hiatal hernia. I had asthma when they did the athletically induced asthma test but I had always had that, and I had never cancelled anything, or ever had a problem as a singer. They said, “We think this will come back. You just probably tried to sing too soon, and your breathing muscles are not working as well.” They worked on me with some speech therapy exercises, and vocalizing, and they said, “Just go back and do everything you can do.”

The artist sought the guidance of her teacher. The lingering vocal issues caused her to cancel upcoming engagements.

R20: I couldn’t even lip trill. Nothing would come out. Only in chest voice. I started thinking, “Oh man, this is psychological.” When the semester [of teaching] ended, I took the baby and then went back to Alabama to my old voice teacher. I stayed there [for] a month, and I worked with him every week for about three and a half weeks. At the end of that time, he said, “you just can’t sing anymore. You have totally lost your ability to sing.” He said, “I’ve never heard anything like it. I’ve never seen anything like it. I can’t explain it, but, you just can’t do it anymore.” Of course, I was devastated. He said, “Just maybe wait a few months, or wait a year, and don’t even try. Just totally relax and quit thinking about it, and see if you can do it.”

I had paid off the agent through the end of the contract. I had to pay penalties to him for cancelling the gigs that I already had, and it was a financial nightmare, but I got through it. I got pregnant again and had another C section. The doctor said, “When I went in to do this C section, you had about ten times the amount of normal scar tissue, where you had had the first C section.” He said, “I cut all of that out,” because it was really like muscle adhesions and scar tissue. He said, “Since I was already in there, you would probably build up more scar tissue on top of it, so I just took everything out that I could.” (complete hysterectomy) About three months after I had the second C section I went over to my studio at [local college] and I could sing. I could make a sound up. It was horrible, really constricted, but I could make a sound above chest voice that was in a mixed sound up to about an E, an octave and two notes above middle C. It sounded horrible, but at least I could do it. So, that got me going, and I started practicing slowly, slowly, slowly, trying to make sounds. It took me about two more years before I could really sing a song, really get through anything.

The search for a cause took multiple contacts with medical professionals. Even though no diagnosis was forthcoming, through patience and diligent practice the artist regained her voice.
Several women were diagnosed with cancer. Their personal strength came across immediately during our communication. The first respondent shared her experience with chemotherapy.

R78: I was diagnosed last June with breast cancer, stage III. I had a lumpectomy and then a re-excison surgery two weeks later. I started chemo in late August and it hit me very hard, landing me in the hospital for two nights. I took a leave of absence from my teaching position but did not stop singing. I actually sang a concert on Halloween night, performing three songs by Liszt. Amazingly enough, my voice was rich and vibrant. I felt absolutely no nerves at all. When you go through chemo, it’s like you are just a body and part of your consciousness is vacant. You are just trying to survive each day and get better enough to have the next treatment in 3 weeks. I attributed the "no nervous" feeling to the experience of chemo, for sure! I also sang two arias from the Messiah in November and again felt my voice very strong.

Curiously enough, I am back at work, teaching 13 students, so it’s a somewhat reduced load. My voice is more tired now and I have no performances scheduled. I think one of the reasons I felt so good about my singing in October and November was that I was NOT teaching and therefore there were no constant demands on my speaking and singing voice.

As far as longevity is concerned, I have never pushed my voice beyond its capability. I have not sung opera beyond my late 20s. Singing solo recitals and the occasional work with orchestra has been the focus of my performing career. I’ve sung the Verdi Requiem four times, even though it’s not really in my Fach (I am a lyric mezzo), but I have sung it intelligently. I never pushed in order to get a certain tone quality. I am cancer-free, 57 years old and wondering what singing I will focus on next. Lately I’ve been thinking a lot about Bach. I might focus on Baroque music for the next few years. And of course, I always love the art song repertory.

Respondent 36 personifies strength and resilience. In response to the researcher’s question about hormone replacement therapy R36 said,

I never was on it, because at age 40 I was diagnosed with a non-Hodgkin’s lymphoma. I was given about a 15% chance to live, and at that juncture, my oncologist said to me, “I don’t want you going on any hormonal treatment.” I didn’t menstruate after the chemo and radiation—my life cycle stopped then. Twenty years later I had ovarian cancer, in 1998. Again, the doctor at that point said, “Please, let’s just stay away from the hormones. I don’t think that they’re good for you with this history that you have had with cancer.”

So, I am free of cancer now, and I have been since 1998, but that was the reason that I never had the hormonal therapy. As a matter of fact, during the time that I was undergoing treatment and so forth, I was still able to sing, and that was a great relief to me, and a great consolation that I had still had that ability to sing, and could perform, even though I was not quite there health-wise.
AR: So, if I can, let me ask you a little bit about, you said at age 40 you had non-Hodgkin’s lymphoma. What was the treatment for that? Was it a drastic treatment? What did they do for that?

R36: Yes, it was terrible. I went into the hospital on weekends for a year, and they administered as much strong chemo as they possibly could. Some of it I overdosed on, and so that was very difficult.

AR: For a full year they did that?

R36: For a full year, but there was a hiatus in the middle of that year when I had a total body radiation for a week, and then I went back and had the three days in the hospital again to finish up the year.

AR: Were you able to sing? I imagine [the chemo] was very hard on your body.

R36: Well, it was hard on the body, but actually, I did continue to sing, and I continued to teach. There was one semester when I did not teach. That was when I was really having problems, but the rest of the time I taught, and I did sing, too. As you say, yes, it’s hard on the body, but if one keeps working at using the physical aspects of one’s body in the right way, then it will continue to work. It was hard work, but it did continue to give me strength enough to sing.

AR: Did you have surgery as a result of your ovarian cancer diagnosis?

R36: Yes. I had a complete hysterectomy. . . . I had a lot of singing to do from [age] 40 on, but as I said, to me it didn’t feel as if the bodily changes that I had had to go through were interfering with my vocalizing at all. I never went through that sort of period where I said, “Oh, my gosh! I don’t know if I can sing anymore.” . . . I was very careful about my body and about making sure that I was a healthy person, even though I’ve been in remission from the cancer, or whatever, but it still meant that I needed to do exercising. I needed to eat well, and not drink alcohol very much. I just took as good care of myself as I could. I got as much sleep as I possibly could, and kept myself healthy.

AR: I appreciate your openness about your lymphoma and the ovarian cancer. I think it’s very heartening for people to know that you got through these treatments, and you were able to keep singing. It did change you physically. It did change you, and put you into menopause, but you were able to continue to sing for many years after that.

R36: That’s right. If you love singing, you can’t stop. You just can’t stop. And that was the thing for me. That was my livelihood. That was my life, you know, and cancer was not going to stop me.
Respondent 10, a mezzo-soprano in the 51-55 age range, shared her experience with perimenopausal symptoms and hormone therapy.

AR: You mentioned that you are perimenopausal, can you tell me a little bit about the symptoms, and maybe what prompted you to try HRTs?

R10: Well, I was just dry a lot. I had a lot of sweats. There was a lot of edema. I think my breath control maybe wasn’t as good as it had been. There was also a chunk of time between 2002 to mid 2007 where I was working an office job and doing some singing here and there, but I was not taking very good care of myself. Then I went off on the road to do a show and was doing OK, but vocally it just wasn’t doing that great. I was on the pill all that time. My gynecologist suggested that I stay on the pill since it was a very low dosage to help ease me over perimenopause. I would get hot flashes, I would be just sitting there, and all of a sudden it would feel like the furnace kicked on. And, it didn’t feel like a fever, but it just felt like somebody turned on a furnace in my body [

laughs].

At one point my gynecologist had me completely go off the pill to see what my symptoms were. We tested my blood levels and hormone levels. The numbers had changed so we knew that I was in menopause. I have a history on one side of the family of heart disease, and on another side I have a history of cancer. So, for me it was fifty-fifty either way, to go on to HRT or not. She told me that her singer clients, patients, who had chosen to go on hormone therapy were so much happier, because it does keep the body flexible, keeps the body younger, keeps you hydrated or moist—you don’t dry out. It makes the muscles more flexible. It prolongs your ability to sing. I thought, “I’m just now coming into my own and feeling great about my singing, and I want to keep it that way. You know, this is my livelihood.”

AR: So, the original thing that prompted you to start HT was primarily physical, as opposed to vocal.

R10: Yes. When I was completely off of the hormones, if I had sugar or I had a glass of wine, that’s when I started to sweat profusely. It was, you know, not only did someone turn the furnace on, but they turned it on in July [laughs].

AR: So, you took contraceptives, and that was keeping everything level, then you started experiencing menopausal symptoms. How long did you go off everything before you started HRT?

R10: About a year.

AR: You really had a break there.

R10: Yes.

AR: Did you, when you went on the HRT, did you notice a benefit to your voice pretty quickly?
R10: Oh, yes. I noticed a change in everything. I mean, I just felt like me again. I felt my moods were not so drastic. I felt I just was more hopeful. My whole…

AR: Your outlook improved?

R10: Yes. I think my agility increased. I feel like the HRT made a big impact on the flexibility of my voice. . . . I was starting to feel sluggish and that I had to work harder to produce sounds like those to which I was accustomed. The hormones may have initially either increased or maintained the range, but I am not pursuing the same types of roles that I used to, because of age and musical theater performing. I've always been a mezzo with higher notes and at one point in time, performed the soprano high D solo in Disney's Fantasia 2000 at Carnegie Hall. . . . I still have a high C--but I need to be warmed up!

Overall, I feel young-ish. I look young-ish. My skin is more supple than others my age who are not on HRT. My speaking voice sounds younger. I'd recommend HRT for singers–if there are not other health concerns that might suggest they do not [take them].

Respondent 41 described the difficulties she experienced during perimenopause. She chose not to take hormones. She worked extensively with a voice teacher and vocal coach to “rework” her voice.

R41: I would say once I became perimenapausal, I started to experience a lot of difficulties in the passaggio. Particularly the middle passaggio, but also the upper passaggio and I would say there was sometimes a brittleness in the sound, or I would just have difficulties phonating clearly, so, [difficulties]with the onset of the tone. And I think later on, once I got into my late 40’s, that I started to really re-examine my technique and think more technically, be more vigilant about my core body strength and things that I didn’t have to think about very much before.

I think that I started to be somewhat symptomatic of perimenopause around 40. I was completely in menopause by the time I was 50. . . . I would say the symptoms that I had, what was actually symptomatic was that I started to notice changes in my voice, that my voice wasn’t always as reliable, and sometimes it almost felt like it was “foreign.” I didn’t always know what was going to come out of my mouth.

AR: Question #14 was about hormone replacement therapy. I was wondering if you ever considered doing anything natural or prescription while you were going through the change?

R41: I never considered doing hormone replacement therapy, because I just thought it wasn’t natural. I didn’t want to do anything; I didn’t want to put artificial hormones there where they weren’t supposed to be. And certainly when I was having vocal troubles, I thought to myself, “Oh man do I really want to carry on like this, or might there be something that might help me through it.” I thought, “You know what, if that means the end of my singing career, then so be it.” Because it seemed to me that just following the normal course of my body’s aging was the right thing to do, and not to interfere with the process. That being said, one thing that I did,
well first of all, I went back and did a lot more technical work again with a voice teacher and with a coach. I even had for a time worked with a speech therapist, and all those things were very helpful to me—just sort of re-examining my technique.

I also took an adrenal supplement, which I found very helpful for all kinds of the symptoms of menopause. I don’t know if it was specifically helpful to my voice, but it helped me with insomnia, hot flashes, mood swings and things like that. Some of the reading that I was doing during that time was suggesting that many women who get menopausal symptoms are actually suffering from adrenal depletion.

Respondent 61, in the 61-65 age range, took hormones for several years and then opted to stop therapy.

AR: Question #14 is “Are you currently or were you previously on hormone replacement therapy?” You answered, “Yes.” Do you remember about what age you went on those?

R61: I knew something was going on about age 44, but I did not go on the medication until probably age 50 or 51.

AR: So you could feel some changes affecting your voice?

R61: I knew something was going on, but it did not occur to me that it was menopause. I felt I was still too young to be going through menopause.

AR: Right. So around age 51 you started. Did you go to the OB/GYN and get a prescription, or did you use something natural?

R61: I went to the OB/GYN and got a prescription.

AR: Which one did you take? Was it primarily progesterone?

R61: It was a combination of progesterone and estrogen. I only took it for a few years and then I decided I wasn’t going to be singing as much as I used to. I really don’t like the idea of taking any kind of drugs unless I really have to. I decided that if I don’t really have to, I am just going to try to make it through the night sweats and hot flashes.

AR: Did you know that as soon as you went off of it that some of the symptoms might return? Did you have a period of time when you had to go through all of that again?

R61: Still. I am still going through it. I have been going through it so long I can’t tell you. Now I am taking something called Amberen. I get it by mail order. It’s a holistic, natural thing that seems to help. Nothing seems to stop the hot flashes but I don’t have them as often as I did.
AR: It is very interesting because women are reporting so many different experiences with how many years it is taking them to get through the change. Have you, in fact, gone for over a year without any cycle at all?

R61: Yes. I don’t have the mood swings or night sweats anymore but I do still have the hot flashes. They are still there.

AR: May I ask you your age?

R61: I am 62. I’ll be 63 in April.

AR: Can you talk a little bit more about how you feel the voice changed now as you’ve gone through menopause, in terms of the feeling of the voice, the color quality, and your range.

R61: The range, I don’t know if that’s menopause, maybe age. Age, for everybody lowers the voice a bit or shortens the range. I never really had a wonderful top. I could always get up to a high C and on occasion I could do Carmina Burana early on. Now, I can still sing Serena in Porgy and Bess which goes up to a B. I can still sing that, but I have to work at it. The range has lowered even more—like another whole octave below that.

AR: How low are you comfortable singing?

R61: These days when I go home, I sing in my church choir. I sing tenor in their range and I have been known to sing with the baritones when they need somebody. Easily down to the C below middle C. The biggest thing for me was I just felt like there was a veil over my voice. It is hard to describe because I have this chronic sinus problem that you can hear in my speaking voice, which makes the lower middle [range] iffy. Sometimes it works, sometimes it doesn’t. I think it was that not knowing what was going to come out. I would work on it and work on it in the studio and then when you go out to sing and you open your mouth and [feel] “No, we are not doing that today.” That really started messing with my confidence. And since confidence is such a big part of performance, it really scared me. I just found myself backing away from it. I feel like there was kind of a veil over the voice that I couldn’t get the sharp, clear sound that I was used to.

AR: Did you notice that it improved when you went on the hormone replacement? Was it a little more stable during that time?

R61: It was a little more stable.

AR: But not dramatically different?

R61: I had worked with a woman in London who said that it had been proven that the cords do swell a little bit and this would help keep them from swelling and make it a little easier to sing.

AR: So the doctor recommended it just to help deal with any swelling?
R61: No, this was actually a teacher that I was working with who said that she had been on them at one point and she went off them. She noticed a major difference so she went back on them as long as she was singing. So I thought I’d try it. It seemed to make a bit of a difference. She said her doctor said that there was definitely proof that it could help with some of the hormonal changes that caused the cords to swell.

AR: We are eager to hear from women in the field about what they have experienced. Not that we would be recommending a particular brand or particular product, just some choices that other singers have made that have been down this road ahead of us. There is very little [information] out there.

R61: Very little. I know I have also thought about doing something like you’re doing. There’s got to be other people out there who have gone through this. Then I thought about other careers like Beverly Sills. It could have been as simple as hormonal what caused her to stop singing at age 50. Her range started diminishing. She changed her repertoire into heavier stuff because she thought that was what she needed to do when actually what was happening was probably that whole menopause thing. Nobody talked about it. Nobody, I guess, wanted to admit to it. Leontyne Price also went through a time when she went through some vocal problems around in her 50s. It’s a lot more prevalent than we know.

Respondent 83, a perimenopausal singer in the 45-50 age range, shared information on her choice to start hormone therapy prior to the onset of any menopausal vocal issue.

AR: Can you tell me about your experience with hormone replacement therapy?

R83: I have only used over-the-counter progesterone cream. My alternative doctor, who uses a lot of supplements, put me on it to stave off vocal changes, that and lots of magnesium, fish oil, vitamin D... I imagine I will go on bioidentical hormones when the time comes. In the meantime, I am singing even more Zwischen Fach roles.

AR: It is so interesting that you and your doctor are being proactive. Do you have any colleagues who are doing the same thing?

R83: I don’t have any colleagues who have been thinking about this early, although I have tried to get a few onboard. My former teacher tells all her students to go on HRT or they will lose their high notes. I wanted to think about it in an alternative way. I wanted my doctor to learn about what I might need as a singer.

Respondent 3 noticed improvements to her lung function and stamina.

R3: I was one of the postmenopausal women who had not tried HRT. I had other health concerns; shortness of breath and GERD as well as going through menopause. When I asked to be put on HRTs, my gynecologist and I discussed the calculated risks. I had been on the pill more than 30 years and my family has no history of ovarian or breast cancer. To my surprise, my
speaking voice responded immediately, I got back more vocal stamina, and my lungs improved. My pulmonologist said that in his experience, there is usually improvement of breath with HRTs. I realized it was taking more breath to manage the fragility of the folds. I still sounded young, but with a great deal of effort. After a few months on HRT the voice and breathing feel more coordinated.

Respondent 62, now postmenopausal in the 56-60 age range, began HRTs about the time she began her doctoral studies at age 50.

I did begin taking HRT, a mild dose, right before I turned 50. I just wanted to protect my singing ability as long as possible. I never experienced any congestion or swelling, but I have been dealing the past four to five years with the hardening of the arytenoid cartilages. My lower voice is much expanded, but it’s much harder to sing high notes without a slight wobble creeping in. Others tell me they don’t find it annoying, but I am aware of it. I’m making choices for lower rep now and enjoying it just as much.

Maybe I’ll stay on for one more year and reevaluate as I turn 60 a year from now. I asked the doctor at my last checkup a year ago, “How long should I stay on this?” and he said, “You have no indication of heart disease, none of the risk factors for stroke or any of those things. This is such a low dose that you can stay on it as long as you want to.” He said, “When you change your mind you can just stop taking them. You don’t have to weaned off or anything like that. When you feel you have had enough, just stop taking them.” That made me feel good. It is definitely in my hands.

Respondent 7 noticed changes to her voice during perimenopause and began hormone replacement therapy.

R7: I was in my early 40s when I entered perimenopause. It really wasn’t my voice, but it was my sleeping patterns, my ability to memorize music, strangely enough. I was having those kinds of symptoms, and mood swings, . . . My periods were crazy. I would go six months without one, and then I’d have one every three weeks. So, it was just to even out my cycles. It was hormone replacement therapy—it was a real light birth control pill. I think that was for about four years, then when I entered menopause seriously, the doctor put me on the patch . . . that and Prometrium combined. I was on that for about ten years. I would say in the last maybe two years, I’ve been on Prempro. . . . In some ways I feel that I’m stronger vocally than I’ve ever been. It could be because I’m teaching and I’m more aware of technique. I’m not just singing naturally, I’m actually thinking about what I’m doing . . . . The onset is much more liquid. The onset feels easier. Actually, in some ways, support is easier. I enjoy making “noise” now more than I ever have. . . . I know that when I need to demonstrate for a student, it’s there.

AR: It’s very interesting. I will say a number of ladies have reported that they really, now in their 50s, just absolutely love the way their voice feels. The consistency is there, and they are just really enjoying singing.
R7: Yes. That’s exactly my situation.

Additional interesting comments about HRTs follow:

R1: I think I started with the soy at about age 50, when the “tropical heat wave” really came on like gangbusters, though it had been bothering me off and on for years. Though I really felt my voice has been at its best since then, I can't isolate the hormones as the cause, but I am sure that it helped!

R25: My doctor did put me on this estrogen/progesterone regimen recently. It's a spray estrogen and a creme progesterone. I haven’t noticed any change in my voice from the HRT. The primary change I have noticed is my energy level for singing.

R40: Taking HRTs was a pivotal moment in my health . . . mentally, physically and vocally. Within three days I noticed an improvement in my mood, within three weeks I noticed changes in my hair and skin. Within six weeks I found my voice to be more reliable, flexibility returned, strength returned and a feeling of heaviness in my larynx disappeared. I fight my GYN every time she suggests going off HRT and my dose is very low.

It is clear from these commentaries that professional female singers face many challenges over the course of their careers. Consultations with otolaryngologists and voice teachers facilitated the return of voice function after injury. Cancer patients reported the ability to keep singing even during chemotherapy and radiation treatments. For peri- and postmenopausal singers the choice to begin and end hormone replacement therapy was based on individual needs and priorities. Many reported improvements to their voices and overall well-being. As treatment options continue to evolve, female singers will undoubtedly have more resources to help maintain their voices through the menopausal transition and beyond.
CHAPTER SIX

CONCLUSION

The Professional Female Singer and Career Longevity Survey was designed to cover a broad range of topics uniquely targeted to experienced female singers. For the majority of singers in this study, vocal training began between the ages of 14 and 19. As we see from the data, many of the participants have been using their voices for performing and teaching for over thirty to forty years. Two singers reported their voices were at their best as early as age 22 and as late as age 65. Twenty-nine percent of the singers felt their voices were at their best by age 30. Forty percent or more of the women reported their voices were at their best from age 30 to age 50. At age 51, the national average age of menopause, the number of singers reporting their voices were at their best dropped dramatically to 16%. These findings, along with reported menopausal vocal syndrome, clearly suggest the impact of menopause on professional female singers. Many of the artists reported the need to return to a voice teacher for guidance to “rework” their voices during the menopause transition.

Repertoire Changes

Thirty-six percent of the singers reported a change in repertoire during their careers. Voice science research suggests that most women will experience a lowering of their voices during their lifetimes. Additional information would be needed to verify the impetus for the change in repertoire among this group of professional singers.

Three Phases of Life

Every woman can anticipate three distinctive phases in her reproductive life: young adulthood marked by the onset of menses, the reproductive years, and the years following the cessation of menses or menopause. Seventy-one percent of respondents used oral contraceptives at some point, as documented by Survey Question #13. Interviewees reported using oral contraceptives to regulate their cycles and avoid pregnancy early in their careers. Several were prescribed oral contraceptives during perimenopause to help maintain hormonal balance. Research from women’s health resources revealed that “the change” can occur as early as the
late 30s. For some women the transition to menopause is instantaneous—the result of a hysterectomy. Many of the singers reported a slow progression through several years of fluctuating hormone levels and irregular cycles. Because singers can experience menopausal vocal syndrome at any time during the menopausal transition, voice scientists recommend that women have baseline measurements made of all their hormones prior to the onset of menopause.

As Heman-Ackah explains,

Endocrine (hormone-related) problems may include thyroid abnormalities, diabetes, other abnormalities in glucose (sugar) metabolism, pituitary abnormalities, abnormalities in sex hormone levels, and abnormalities in cortisol (a natural steroid made by the body to help it manage and heal from stress and bodily injury) levels. A dysfunction in any of these hormone systems can have marked vocal effects. These can include the accumulation of fluid in the superficial layer of the lamina propria of the vocal fold, changes in the shape of the larynx, changes in the bulk of the muscles in the larynx, changes in the thickness of the vocal folds, and changes in the function of the laryngeal nerves.  

Heman-Ackah goes on to say,

For the professional voice user whose vocal career is suffering from the effects of menopausal vocal syndrome and who wishes to continue her career, consultation should be sought from a physician to determine her individual risks associated with taking hormones replacement and with a laryngologist to determine whether hormone replacement therapy is appropriate for the vocal condition. . . . Singing teachers should be familiar with these issues, but should recognize that the medical judgment process is very complex. For this issue, the teacher should be very wary of offering any opinion other than to advise consultation with an expert voice doctor and an endocrinologist, gynecologist, or primary care physician.  

Hormone Use

As this study confirmed, many professional female singers choose to take oral contraceptives and hormone replacement therapy at some time during their careers. The following chart combines responses from two survey questions: #13 Have you ever taken oral contraceptives? and #14 Are you currently or were you previously on Hormone Replacement Therapy?, with respondent age information. The left side of the charts shows among the women who said, “Yes” to Oral Contraceptive Use, 20% of women age 45-50 reported using HRTs. The number rises to 29.4% for women age 51-55, 55.56% for women age 56-60, 63.64% for women

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53 Ibid., 473.
age 61-65, and 75% for women over age 65-70. One hundred percent of the women over age 71 took HRTs if they had previously taken oral contraceptives.

In contrast, none of the participants in the 45-50 age range have taken HRTs if they did not take oral contraceptives. (A number of women in that age range are premenopausal and presumably not experiencing a hormonal imbalance.) None of the ladies in the 51-55 or 66-70 age ranges have taken HRTs if they had not previously taken oral contraceptives. Of women with no prior use of oral contraceptives in the 56-60 age range, 37.5% have taken HRTs. Only twenty percent of the participants in the 61-65 age range with no prior oral contraceptive use have taken HRTs. Sixty percent of women in the 71+ age range who have not taken oral contraceptives reported HRT use. Although the sample population is small, it appears that women are more likely to take hormone replacement therapy if they have previously taken oral contraceptives.

In the recent article “A Decade after the Women’s Health Initiative—The Experts Do Agree” in *Menopause: The Journal of The North American Menopause Society*, Cynthia Stuenkel reports,

Systemic hormone therapy is an acceptable option for relatively young (up to age 59 or within 10 years of menopause) and healthy women who are bothered by moderate to severe menopause symptoms. Individualization is key in the decision to use hormone therapy. Considerations should be given to the woman’s quality-of-life priorities as well as her personal risk factors such as age, time since menopause, and her risk of blood clots, heart disease, stroke, and breast cancer. In observational studies, both transdermal estrogen therapy and low-dose oral estrogen therapy have been associated with lower risk
of venous thromboembolic events and stroke than standard doses of oral estrogen, but comparison randomized clinical trials are not yet available.\textsuperscript{54}

Heman-Ackah reported,

In addition to the beneficial effects on menopausal vocal syndrome, hormone replacement therapy has been most beneficial in relieving the other symptoms of menopause, including hot flashes, sleep disorders, and osteoporosis. In some premenopausal women, hormone replacement may be used to limit excess bleeding associated with menses, limit the growth of uterine fibroids, and prevent pregnancy. Hormone replacement therapy was also thought to decrease the risk of colorectal cancer, heart disease, and stroke; these were the reasons for advocating the general use of hormone replacement therapy in all postmenopausal women.\textsuperscript{55}

The phone interview participants overwhelmingly agreed that more information needs to be exchanged among professional female singers on the subject of menopause. They consistently reported a positive experience with hormone replacement therapy. Several of the women noted an immediate improvement in their overall sense of well-being. As their hormone balance was re-established, a number of participants reported a positive impact on their singing voices. They felt better, physically and were more inclined to continue singing.

\textbf{Choices that Contribute to Career Longevity}

One of the primary goals of this study was to discover what sacrifices or choices professional female singers have made which helped them to maintain their voices.

The various responses were roughly divided into five categories:

\begin{itemize}
  \item \textbf{Training Choices} (coaching, continued study, practice)
  \item \textbf{Career Choices} (repertoire choices, scheduling, contract acceptance)
  \item \textbf{Lifestyle Choices} (family/social, noise avoidance, rest, smoking avoidance, exercise)
  \item \textbf{Medical Choices} (medical care, supplements, hormone therapy)
  \item \textbf{Dietary Choices} (nutrition, diet, hydration, alcohol avoidance)
\end{itemize}

The greatest number of comments related to making positive lifestyle choices: avoiding excess socializing, avoiding smoking and smoky environments, getting adequate rest, and

exercise, especially yoga. Many singers stressed the importance of selecting appropriate repertoire, adequately spacing performances, and learning to say “no” to opportunities to perform repertoire which ultimately could have done lasting damage to the voice. Many of the singers also reported the benefit of daily practice and continued vocal training to the maintenance of their voices. Eating a healthy diet and avoiding alcohol were considered by many singers to be beneficial.

A significant number of participants cited exercise as a perceived contributor to career longevity which corroborates the benefits outlined by voice scientists. The researcher found that diet and exercise were universally recommended by medical practitioners in the field of women’s health to ameliorate the weight gain associated with menopause. The following estimated daily calorie requirements were published in the Dietary Reference Intakes Report by the Institute of Medicine in 2002. They appear in Karen Giblin and Mache Seibel’s book, *Eat to Defeat Menopause.*

Table 6.1

<table>
<thead>
<tr>
<th>Age</th>
<th>Sedentary</th>
<th>Moderately Active</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-8</td>
<td>1,200</td>
<td>1,400-1,600</td>
<td>1,400-1,800</td>
</tr>
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<td>9-13</td>
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<td>1,600-2,000</td>
<td>1,800-2,200</td>
</tr>
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<td>2,000</td>
<td>2,400</td>
</tr>
<tr>
<td>19-30</td>
<td>2,000</td>
<td>2,000-2,200</td>
<td>2,400</td>
</tr>
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<td>2,000</td>
<td>2,200</td>
</tr>
<tr>
<td>51+</td>
<td>1,600</td>
<td>1,800</td>
<td>2,000-2,200</td>
</tr>
</tbody>
</table>

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It is significant to note the recommended decrease in caloric intake for women age 31-50, and the second recommended decrease for women age 51 and over. The timing of this change in caloric intake correlates with the national average for menopause of age 51.57

A number of singers reported loss of breath capacity as they aged. Their statements corroborate Sataloff’s findings. As he explains,

Respiratory function normally decreases with advancing age. In particular, residual lung volume increases, with the consequent decrease in vital capacity, tending to undermine the primary respiratory improvements resulting from earlier vocal training. So as a singer's or speaker's respiratory potential diminishes, it is essential that he or she remain as close as possible to optimum respiratory conditioning.58

Following the recommendations from the Institute of Medicine could aid singers in restoring lost respiratory function and therefore benefit vocal production. The institute suggests that an average of 60 minutes per day of moderately intense physical activity (e.g., brisk walking or jogging at 3–4 mph) or shorter periods of more vigorous exertion (e.g., jogging for 30 minutes at 5.5 mph), in addition to activities identified with a sedentary lifestyle, was associated with a normal body mass index range and is the amount of physical activity recommended for normal-weight adults. An average of 60 minutes of moderately intense daily activity is also recommended for children.59

The women who took part in this study were all devoted performers and teachers. Their passion for singing and desire to continue their musical careers pervaded every interview. As Respondent 36, a singer in the 71+ age group, explained,

There are plenty of people who have the ability to still teach in their 70s. I feel as if I do, and I enjoy it. I had a terrible, terrible time retiring. I had decided to go absolutely, totally out of music. I had a whole library, a whole room of music, and recordings. I gave it all to my students and/or to universities, and then I felt lost. I was just beside myself. It’s been a joy to start teaching again, and to have that communion with a student during those hours that we’re together.

57 According to the Women’s Health Organization, “natural menopause” is the permanent cessation of menstruation and is diagnosed following twelve months of amenorrhea, or the absence of a period. The average age of onset is fifty-one.57
Many of the respondents spoke of the important role their voice teachers played in their lives. Not only were they the source of the vocal technique needed to become a professional singer, but they were seen as a valuable resource when singers developed vocal issues.

Women’s health providers recommend that adult women be educated on all phases of their reproductive lives to recognize symptoms of hormonal imbalances as they occur. Because the transition through perimenopause to postmenopause can take many years, it is important that female singers and their voice teachers be familiar with the characteristics of menopausal vocal syndrome. Medical consultation with experts in the field of women’s health and voice science is recommended as a singer ages.

Implications from the present study suggest that future researchers examine the effect of hormone replacement therapy (HRT) on the voice of peri- and postmenopausal singers. Ideally, such studies would measure their voices prior to and after six or more months of HRT, and would solicit singers’ comments regarding their perceptions of the pros and cons of HRT.
Richie Research Letter to Participants (delivered via email or U.S. Mail)

Date

Participant Name

Email or Street Address

Dear ____________________,

I am writing to invite you to participate in my doctoral research project entitled “The Professional Female Singer and Career Longevity” which I am conducting at The Florida State University.

Background Information:

This study, under the direction of Associate Professor Dr. Wanda Brister-Rachwal, seeks to gather information from a small but diverse sampling of 20 to 25 professional female singers. The participants, ranging from approximately 45 to 75 years of age, are predominantly classically trained. Many are actively performing and/or utilizing their singing voice on a day-to-day basis in a private, college or university teaching studio. Female singers who have recently retired are also asked to take part in the research. Each participant has been singing professionally and/or teaching for a minimum of twenty years.

While a fair amount of information is available on the physiological changes the female voice undergoes as a natural consequence of aging, little has been written by female singers about changes they have experienced in their voice over the course of a vocal career. The intent of this research is therefore to create a vehicle for a diverse group of professionally trained female singers to share their personal experience coping with the issues women face as they age and how those changes impacted their voice and singing career.

Procedure:

You will be asked to complete an online survey which has been created at www.constantcontact.com. The initial questions focus on education, training, voice classification etc. Subsequent questions explore the activities or the regimen each singer developed to keep the voice in shape for performing and teaching. Some of the most crucial questions focus on topics which were once considered taboo and rarely discussed in the past, i.e., pregnancy, menopause, vocal surgery, cancer, or other

FSU Human Subjects Committee Approved 5/24/11. Void after 5/22/12 HSC# 2010.3620
serious health issues. It is hoped that each participant will freely share her experience coping with the physiological changes associated with aging as well as how she coped with any medical condition which may have directly or indirectly affected the voice. The final group of questions will ask you to share your advice on how to achieve a long and successful career. If you prefer to receive a paper copy of the survey rather than use the online service, please reply to this letter with your mailing address.

Participation Methods: Online, paper or telephone

Directions for online participation:

1. Click on the link below to enter the confidential survey at Constant Contact.
2. Review the instructions on the Welcome Page.
3. Complete all questions and comment sections as they relate to your personal experience. You may return to the survey more than once, from the same computer, to input your responses.
4. Click on the “Submit” button to complete the process.

Directions for manual survey completion:

Individuals who prefer to complete a paper copy of the survey must sign the consent form below and return it to the researcher along with the completed survey in the enclosed stamped return address envelope.

Please complete all questions and comment sections as they relate to your personal experience.

Should you wish for your name to be published with your comments in the treatise document, please mark an “X” next to the appropriate question on the consent form.

Risk and Benefits:

There are no foreseeable risks or discomforts if you agree to participate. While there may be no direct benefit to you, the possible reward of your participation is the
exchange of information which may be helpful to other professional female singers desiring to achieve a long and rewarding career.

Compensation:
There is no compensation for participating in this research.

Confidentiality:
All the information you provide will be strictly confidential. Should you wish for your name and comments to be published in the treatise, please provide your name in the space provided after the last question.

Voluntary Nature of the Study:
Your participation in this study is entirely voluntary. If you choose not to participate simply reply to this email and indicate "Decline to participate" in the body of your email.

Contacts and Questions:
If you have any questions concerning this research study, please contact me at [redacted] or via email at [redacted]. Dr. Brister can be reached via email at [redacted].

If you would like a copy of the treatise, please indicate "Yes" at the conclusion of the survey.

Your participation is greatly appreciated.

Sincerely yours,

Anne Elise Richie, mezzo-soprano

FSU Human Subjects Committee Approved 5/24/11. Void after 5/22/12 HSC# 2010.3629
Statement of Consent:

I am requesting a paper copy of the survey. I understand that by signing below I give my consent to freely participate in this research survey without compensation.

Please mark an "X" next to the appropriate response.

I prefer to remain anonymous. __________

I would like my name published in conjunction with my responses and comments in the treatise document. __________

I would like to complete the survey with the researcher via telephone. Please call me at the following number: _______________________

I agree to return the completed survey within 4 weeks of its receipt in the enclosed stamped return envelope. __________

Printed Name: ____________________________

Signature: ________________________________

Date: ________________________________
APPENDIX B

EMAIL CONSENT LETTER

Dear Participant,

I am writing to invite you to participate in my doctoral research project entitled “The Professional Female Singer and Career Longevity” which I am conducting at The Florida State University.

Background Information:

This study, under the direction of Associate Professor Dr. Wanda Brister-Rachwal, seeks to gather information from a diverse sampling of 50 to 100 professional female singers who have been singing and/or teaching for a minimum of 20 years. Participants (age 45–75) will be asked a variety of questions about their voice and changes they experienced over the course their career.

The survey includes questions on topics which were once considered taboo and therefore rarely discussed, i.e., pregnancy, menopause, vocal surgery, cancer etc. At the conclusion of the survey you will be asked if you would like to share your personal experience and insights on achieving career longevity in greater detail through an optional phone interview.

Procedure:

Please complete the approximately 8-10 minute online survey at www.surveymonkey.com.
1. Click on the link below to enter the confidential survey.
2. Complete all questions as they relate to your personal experience.
3. Click on the “Finish” button to complete the process.

If you prefer to complete a paper copy of the survey, send your request to aermezzo@gmail.com

Voluntary Nature: Your participation is entirely voluntary.

Risk and Benefits: There are no foreseeable risks or discomforts if you agree to participate. While there may be no direct benefit to you, the possible reward of your participation is the exchange of information which may be helpful to other professional female singers desiring to achieve career longevity.

Compensation: There is no compensation for participating in this research.

Confidentiality: All the information you provide will be strictly confidential. Should you wish your name to appear with your comments in the treatise, please indicate “Yes” on the final question.
Contact Information: I can be reached at [redacted] or via email at [redacted]

Your participation is greatly appreciated.

Anne E. Richie, mezzo-soprano

Here is a link to the survey:
https://www.surveymonkey.com

This link is uniquely tied to this survey and your email address. Please do not forward this message.

Please note: If you do not wish to receive further emails from us, please click the link below, and you will be automatically removed from our mailing list.
https://www.surveymonkey.com/optout.aspx
APPENDIX C

SURVEY

The Professional Female Singer and Career Longevity

Please answer each question as it pertains to your singing and/or teaching career.

1. I freely agree to participate, without compensation, in the anonymous, confidential survey "The Professional Female Singer and Career Longevity."
   - Yes
   - No

2. In which age category do you fall?
   - 45-50
   - 51-60
   - 61-65
   - 66-70
   - 71+

3. What is your race/ethnicity? (You may check more than one box.)
   - White
   - Black or African-American
   - American Indian or Alaskan Native
   - Asian
   - Native Hawaiian or other Pacific Islander
   - Other (please specify) [ ]

4. At what age did you begin voice lessons?
   - 10 or younger
   - 11-13
   - 14-16
   - 17-19
   - 20 or older
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5. What was your voice type at the start of your career?
- Coloratura Mezzo
- Lyric Mezzo
- Dramatic Mezzo
- Contralto
- Coloratura Soprano
- Lyric Soprano
- Dramatic Soprano
- Spinto
- Other (please specify)

6. How many years have you been performing?
- Less than 20
- 21-30
- 31-40
- 40 or more

7. How many years have you been teaching?
- Less than 20
- 21-30
- 31-40
- 40 or more

8. During what age range do you believe your voice was at its best?

9. How frequently did you perform the following genre during your career?

<table>
<thead>
<tr>
<th>Genre</th>
<th>Frequently</th>
<th>Occasionally</th>
<th>Rarely</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art Song</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabaret/Jazz</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Music Theatre</td>
<td></td>
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</tr>
<tr>
<td>Opera</td>
<td></td>
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<tr>
<td>Oratorio</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Symphonic Works</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
10. Did you make any significant changes to your repertoire during the course of your singing career?

- I transitioned to higher repertoire.
- I transitioned to lower repertoire.
- I sang essentially the same repertoire.
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11. Which of the following best describes your current hormonal status?
- Premenopausal
- Perimenopausal - irregular cycles or fluctuating hormone levels
- Postmenopausal - one full year or more since last menstruation

12. Have you had children?
- Yes
- No

13. Have you ever taken oral contraceptives?
- Yes
- No

14. Are you currently or were you previously on Hormone Replacement Therapy?
- Yes
- No

15. Have you ever been diagnosed with any of the following vocal issues? (Select any/all that apply)
- Cyst or Polyp
- Dysphonia
- Granuloma or Nodule
- Vocal Hemorrhage
- None of the above
- Other (please specify)

16. Have you ever been diagnosed with cancer or other life changing illness?
- Yes
- No
**The Professional Female Singer and Career Longevity**

17. How significantly did the following influence/contribute to your career success?

<table>
<thead>
<tr>
<th></th>
<th>Major Influence</th>
<th>Moderate Influence</th>
<th>Minor Influence</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Teacher</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Coach/Accompanist</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Conductor/Composer</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Management</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Patron</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Family</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Friends</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

18. Which of the following statements best describes your approach to maintaining your voice?

- ☐ I have to sing daily to stay in shape.
- ☐ I sing while teaching which keeps me in shape.
- ☐ I prefer to save my voice and sing only as needed to prepare for a performance.

Other (please specify)

19. In your opinion, has teaching helped you maintain your voice?

- ☐ Yes - Very Beneficial
- ☐ Yes - Somewhat Beneficial
- ☐ No - Not Beneficial
- ☐ Not Applicable

20. If you are no longer actively performing how did the following factors impact your decision?

<table>
<thead>
<tr>
<th></th>
<th>Significant Impact</th>
<th>Moderate Impact</th>
<th>Little Impact</th>
<th>No Impact</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Change</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Family Obligations</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Finances</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Health Issues</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Lack of Performing Opportunities</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
## The Professional Female Singer and Career Longevity

### 21. If you have retired from teaching how did the following factors impact your decision?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Significant Impact</th>
<th>Moderate Impact</th>
<th>Little Impact</th>
<th>No Impact</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Change</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Family Obligations</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Health Issues</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Asked to retire from college/university position</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Reached retirement age</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

### 22. What sacrifices did you make that you believe preserved your voice and contributed to your career longevity?
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Please complete the final four questions and hit "Finish" to submit your survey responses. Thank you for your participation.

23. I would be willing to participate in a phone interview to further discuss my career as needed for this project.
   ○ Yes
   ○ No

24. I believe some of my colleagues/acquaintances might like to participate in this research. Their name(s) and contact information are listed below.

25. Please send me the following information:
   ○ I would like a digital copy of the survey results.
   ○ I would like a digital copy of the treatise.
   ○ Please send me both documents.

26. I would like my name to be included with my comments in the survey results and/or text of the treatise.
   ○ Yes
   ○ No - I prefer to remain anonymous
APPENDIX D

HORMONE IMBALANCE INDICATORS

SYMPTOMS OF ESTROGEN DEFICIENCY

- Hot flashes
- Night sweats
- Vaginal Dryness
- Mood swings (mostly irritability and depression)
- Mental fuzziness
- Headaches, migraines
- Vaginal and/or bladder infections
- Incontinence, recurrent urinary tract infections
- Vaginal wall thinning
- Decreased sexual response

SYMPTOMS OF ESTROGEN EXCESS

- Bilateral, pounding headache
- Recurrent vaginal yeast infections
- Breast swelling and tenderness
- Depression
- Nausea, vomiting
- Bloating
- Leg cramps
- Yellow-tinged skin
- Excessive vaginal bleeding

SYMPTOMS OF PROGESTERONE DEFICIENCY

- Premenstrual migraine
- PMS-like symptoms
- Irregular or excessively heavy periods
- Anxiety and nervousness
APPENDIX D cont.

SYMPTOMS OF EXCESS PROGESTERONE

- Sleepiness
- Drowsiness
- Depression

SYMPTOMS OF TESTOSTERONE DEFICIENCY

- Decreased libido
- Impaired sexual function
- Decreased energy overall
- Decreased sense of well-being
- Thinning pubic hair

SYMPTOMS OF TESTOSTERONE OVERDOSE

- Mood disturbances
- Acne, particularly on the face and scalp
- Increased facial hair growth
- Deepened voice

APPENDIX E

GLOSSARY COPYRIGHT PERMISSION REQUEST

Request for permission to use portions of the North American Menopause Society’s Menopause Glossary

From: Anne Richie
Sent: Tue 3/19/2013 4:51 PM
To: info@menopause.org
Subject: Glossary

Dear Sir or Madam,
I recently discovered the wonderful menopause glossary you have posted on the NAMS website. I am writing to request permission to use some of the definitions from the menopause glossary in my treatise on professional female singers.

Thank you.

Anne Elise Richie

From: angela@menopause.org
Mar 20, 2013, at 2:58 PM

Hello Anne,
You have our permission to use the definitions – please credit: “Copyright © 2013 The North American Menopause Society. All rights reserved.”

Thank you!

The North American Menopause Society (NAMS)
5900 Landerbrook Drive, Suite 390
Mayfield Heights, OH 44124
Tel 440/442-7629 • Fax 440/442-2660
REFERENCES

Articles


Biographies


Books


**Dissertations**


Websites


BIOGRAPHICAL SKETCH

Mezzo-soprano Anne Elise Richie holds a Bachelor of Arts degree in Vocal Performance from the College Conservatory of Music at the University of Cincinnati and a Master of Music degree in Opera Performance from the North Carolina School of the Arts (University of North Carolina School of the Arts). Ms. Richie studied with Beverly Wolff at the Academy of Vocal Arts in Philadelphia, and participated in the Chautauqua Institute and Brevard Summer Festivals. A Metropolitan Opera District Competition winner, Ms. Richie toured Italy, France, and Germany with the Bel Canto Foundation and the Ezio Pinza Council for American Singers of Opera. Ms. Richie was a member of the New York City Opera Chorus from 1998-2001.

Following the events of September 11, 2001, Ms. Richie moved to Florida and subsequently began her doctoral studies at The Florida State University. She has taught at Bergen Community College, the New Jersey City State College, the University of North Florida, and the Douglas Anderson School of the Arts. She presently teaches at her private studio in Jacksonville, Florida.