

# Insult, Interference and Infertility: An Overview of Chiropractic Research

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## ABSTRACT

**Objective:** Infertility is distinct from sterility, implying potential, and therefore raises questions as to what insult or interference influences this sluggish outcome. Interference in physiological function, as viewed by the application of chiropractic principles, suggests a neurological etiology and is approached through the mechanism of detection of vertebral subluxation and subsequent appropriate and specific adjustments to promote potential and function. Parental health and wellness prior to conception influences reproductive success and sustainability, begging efficient, effective consideration and interpretation of overall state and any distortion. A discussion of diverse articles is presented, describing the response to chiropractic care among subluxated infertile women.

**Clinical Features:** Fourteen retrospective articles are referenced, their diversity includes: all 15 subjects are female, ages 22-65; prior pregnancy history revealed 11 none, 2 successful unassisted, 1 assisted, 1 history of miscarriage. 9 had previous treatment for infertility, 4 were undergoing infertility treatment when starting chiropractic care. Presenting concerns included: severe low back pain, neck pain, colitis, diabetes, and female dysfunction such as absent or irregular menstrual cycle, blocked fallopian tubes, endometriosis, infertility, perimenopause and the fertility window within a religious-based lifestyle, and a poor responder undergoing multiple cycles of IVF.

**Chiropractic Care and Outcome:** Outcomes of chiropractic care include but are not limited to benefits regarding neuromuscular concerns, as both historical and modern research describe associations with possible increased physiological functions, in this instance reproductive function. Chiropractic care and outcome are discussed, based on protocols of a variety of arts, including Applied Kinesiology (A.K.), Diversified, Directional Non-Force Technique (D.N.F.T.), Gonstead, Network Spinal Analysis (N.S.A.), Torque Release Technique (T.R.T.), Sacro Occipital Technique (S.O.T.) and Stucky-Thompson Terminal Point Technique. Care is described over a time frame of 1 to 20 months.

**Conclusion:** The application of chiropractic care and subsequent successful outcomes on reproductive integrity, regardless of factors including age, history and medical intervention, are described through a diversity of chiropractic arts. Future studies that may evaluate more formally and on a larger scale, the effectiveness, safety and cost benefits of chiropractic care on both well-being and physiological function are suggested, as well as pursuit of appropriate funding.

**Key Words:** *chiropractic, vertebral subluxation, pregnancy, infertility, research funding, Applied Kinesiology, Diversified, Directional Non-Force Technique, Gonstead, Network Spinal Analysis, Torque Release Technique, Sacro-occipital Technique, Stucky-Thompson Terminal Point Technique*

## The Potential

Inherent in both the history and promise of being born female, is the potential of motherhood. As a growing girl acquires the appropriate amount of body fat to sustain the energy demands of pregnancy, the innate wisdom of the body alerts the pulse generator in the hypothalamus and coordinates hormones to stimulate the shift from childhood to puberty<sup>1</sup>. And so it goes,

the potential for reproduction continues through life's decades until naturally evolving to transform the potential, rewiring the female system for the shift into menopause.

The fulfillment of potential relies on function. The women described in this issue<sup>2-15</sup> entered chiropractic care for a variety of reasons, but aware of the gap between how her body was designed to function and the reality of how her body was functioning, and aware of the tension between potential and reality. Along the process of evaluating presenting complaints, and health histories that included chronic low back pain, neck pain,

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colitis, diabetes and female problems such as absent or irregular menstrual cycles, blocked fallopian tubes, endometriosis, infertility, perimenopause and the fertility window within a religious-based lifestyle, and a poor responder undergoing multiple cycles of IVF, among a wide variety of ages, circumstances and interventions, the authors applied chiropractic principles to identify interference. Their findings revealed the presence of vertebral subluxations in all participants, which this issue offers to describe and document, utilizing a variety of the chiropractic arts. How does the pureness of potential change to the dreams and despair associated with infertility? We start by exploring...

### **The Culture and Insult**

Current statistics reflect an expanding infertility culture comprised of those struggling to become pregnant and an industry offering intervention. Infertility is described as the failure to achieve conception by couples who have not used contraception for at least one year,<sup>16</sup> although recent suggestions revise this description to a more compact time guideline for those over 35, that of 6 months.<sup>17</sup> Statistics from the CDC report in the U.S. there are about 6 million women and their partners affected by infertility.<sup>18</sup> Medical research suggests contributing factors are 55% female and 35% male,<sup>19</sup> while for almost 500,000 couples this research is unable to identify any causative factor.<sup>20</sup> The industry supplying infertility intervention, about 40 clinics in 1986, numbered approximately 360 in 2001.<sup>21</sup>

For the women referenced in this issue, infertility presented as either a silent surprise, was preceded by previous warnings of problems in the menstrual cycle or with previous pregnancies, or coexisted with seemingly non-related trauma. The changes in the fertility window during perimenopause are also discussed, from the perspective of attempting pregnancy while adhering to a religious-based lifestyle. Of the 14 articles discussed, eleven concurrent with this issue, 3 previously published, 8 of the women had received previous unsuccessful medical infertility treatments (for this pregnancy), and 4 were undergoing treatment at the time they entered chiropractic care, either clomid therapy or a multiple cycle of IVF.

Factors reported to contribute to this expanding infertility culture are the insults and irritations associated with modern work and lifestyle habits. The hypothalamus gland is pivotal to reproduction in both men and women, and stress, nutrition and physical activity can influence this gland.<sup>22</sup> It is worth considering all factors, as not only can fertility be altered, but once achieved the fetus is sensitive to drugs, x-ray and environmental chemicals which can cause birth defects, and chronic stress experienced while pregnant can alter the development of physiologic systems that provide for growth and protection of the child.<sup>23</sup> As a woman reflects upon choices from the perspective of potential motherhood, her relationship to her environment and lifestyle are to be reconsidered, and while pregnancy is commonly viewed as a 9-month process, it's suggested that a 12 month time frame is appropriate, incorporating a minimum 3 month preparation period.<sup>24</sup> If not explored previously, this is the time to identify and address what insults or irritations from trauma or daily living, left unchecked, can contribute to the process of infertility or an unsuccessful pregnancy.

As the story of a woman's life unfolds, lifestyle irritants she may have been exposed to can include alcohol, smoking (which can damage eggs), and caffeine (inhibits egg production and can be found in commonly available medications, NoDoz, Excedrin, Anacin).<sup>22</sup> Prescription medications of concern include long term use of either thyroid replacement medication which can affect ovulation or birth control pills that can decrease pituitary function. Nutritional insults include food hypersensitivity and insulin resistance as concerns. Excess weight can be an irritant, as women who are overweight by 40% are less likely to conceive.<sup>25</sup> Environmental toxicity, which can include pesticides (i.e. lawn chemicals), chemical solvents in household products and dusts. Recreational habits, if they include athletic training or racing that alters or stops the menstrual cycle, can be a concern. Emotional lifestyle is also important, as reportedly women who are depressed are less likely to become pregnant. The chemical changes involved in depression may decrease the production of luteinizing hormone (LH), making it less likely to release an egg.<sup>22</sup> Attempted pregnancy outside a suggested "age window" has been suggested to be a factor, we will explore in detail later.<sup>26</sup>

Women's work habits and their impact cannot be ignored. The creative class, which is 38 million strong, is likely to have long work weeks of 49 hours or more, nearly half of all managers and nearly 40% of all professional people did so.<sup>27</sup> Insults on metabolism can occur from excessive work hours, frequent travel (especially across time zones), developing a sedentary lifestyle or developing stress response habits which irritate, such as caffeine (coffee, OTC drugs, energy bars), soda pop, smoking, or a depleting the adrenal system. Biomechanical irritations can result from work stations that are not ergonomic, or excessive computer or phone use.

The history of insults and irritations documented in this issue include physical (car accidents, childhood falls, athletic demands on child or adult, scoliosis, chronic low back or neck pain), chemical (diabetes, colitis, long term use of birth control pills, poor diet, headache and migraines, hormonal changes including perimenopause, amenorrhea, irregular cycles, blocked fallopian tubes, endometriosis, poor IVF responder), and mental/emotional (work stress, miscarriages, infertility). The true value of describing these insults and irritations, is in what this really tells us, as surely not everyone who is exposed to these common factors is infertile. What is the reason some people are able to adapt to these insults and daily irritations with ease, while others flounder and present with dis-ease, with infertility? D.D. Palmer, the founder of chiropractic, asked, "I desired to know why one person was ailing and his associate, eating at the same table, working in the same shop... was not. Why?"<sup>28</sup>

### **The Interference**

The mysteries of the human system, in all their complexity and brilliance, can only be packaged awkwardly when attempting to reduce altered function to defense of a single villain, rather spectators are implored to explore the processes of life and their attendant relationships and stress.

A lone factor, be it insult, irritant, hormone, gene, etc., with whatever the potential it may possess for altering the body, must still rely on the response of that body to determine it's impact.

Essential to all processes of life is the nervous system, which perceives the environment and coordinates the cellular community's biological response to the impinging environmental stimuli.<sup>23</sup> It is reasonable to consider that a system that is properly functioning to its potential, may resist destructive forces more successfully and with less damage. What happens when that association is compromised through interference in the nervous system? What behaviors change, as the ability to successfully respond to presenting stress or coordinate the necessary relationships is inhibited and an appropriate adaptive response may be compromised. An increased possibility for resulting distortion in function and well-being is to be considered. Chiropractic's understanding of the processes of life, including relationships and stress is found in the descriptions of interference and subluxation. Chiropractic principle 31 explores the topic of interference as follows: "Interference with transmission in the body is always directly or indirectly due to subluxations in the spinal column".<sup>29</sup> Subluxation, as defined by the Association of Chiropractic Colleges, is a "complex of functional and/or structural and/or pathological articular changes that compromise neural integrity and may influence organ system function and general health".<sup>30</sup> 100% of the women referenced in this issue, who were struggling with infertility, had evidence of interference, as detected by the presence of subluxations.

Essential when considering the topic of interference, is the importance of timing, as subluxations can occur during childhood, even birth, and if unchecked and unresolved, can alter the course of a life, or a family. Articles by Rosen and Ressel document a history of childhood trauma, in one instance associated with gymnastic injuries, and another at 13, when a chair was pulled out from under and caused a forced pelvic landing. Both experienced infertility, in fact, one woman's menstrual cycle stopped completely at 18, only to resume at 65 after receiving chiropractic care.

The Chiropractic Textbook<sup>29</sup> by Stephenson describes the power of reproduction as the ability of the unit to reproduce something of like kind, the power to perpetuate its own kind, and with assimilation, excretion, adaptability and growth, is one of the five chiropractic principle signs of life. We proceed to explore how these principle signs of life are promoted through...

### **The Mechanism and Art**

A variety of the chiropractic arts are referenced, 8 total. Their commonality includes the initial protocol of evaluating for the vertebral subluxation complex, and once identified, proceeding to apply chiropractic care to promote integrity, function and well-being. Their distinctions and relevance to this issue follow:

Torque Release Technique (T.R.T.),<sup>31</sup> utilized by Anderson-Peacock, Bedell, Kaminski and Nadar, is tonal, non-mechanistic and non-linear, and employs a neurologically-based analysis that incorporates non-linear time sequence adjusting priorities, and the Integrator™, a torque and recoil release adjusting instrument. Attention is given to the subluxation as a separation from wholeness, an imbalance between incoming forces and internal resistive forces, often an exaggerated perception of stress causing inappropriately excessive internal resistive

response. Categories of stress include: Physical (trauma, thermal, electro-magnetic, gravity), chemical (nutritional, toxic, mood altering), and mental (perceived threats of stress, emotional and genetic). TRT research cites work by Burstein and Potrebic (1993) of Harvard Medical School, which provides evidence for the direct projection of the spinal cord neurons to the amygdala and orbital cortex, and suggest these pathways play a role in neuronal circuits that enable somatosensory information, including pain, to effect function, including behavior, autonomic and endocrine. The stress histories presented by authors utilizing TRT include, physical (trauma from motor vehicle accident, a fall resulting in a fractured sacrum), chemical (nutritional distortion associated with colitis, blocked fallopian tubes), and mental/emotional (negative emotions resulting from 2 miscarriages, and emotional stress from decreased perimenopausal fertility window within a religious-based lifestyle).

In Sacro-Occipital Technique (S.O.T.),<sup>32</sup> utilized by Blum and Rosen, specific categories define parameters of clinical findings to evaluate neuropsychological changes affecting the autonomic system, that can result in aberrant parasympathetic-sympathetic balance and viscerosomatic reflex dysfunction. The trademark is its use of wedge shaped blocks to normalize the attitude of the pelvis in a gentle, specific way, including stabilizing the SI joint, reducing meningeal tension, or relieving pressure from the intervertebral discs safely and without force. Attention directed at pelvic integrity is essential, as pelvic imbalances and subluxations can play a pivotal role in pelvic organ malpositions. Pelvic distortions are associated with both cases, including a history of childhood gymnastic injuries and car accidents, and a chronic colitis case (12 years).

In a case study by Adams, Applied Kinesiology (A.K.)<sup>33</sup> is described as "a functional neurologic assessment process that extends the neurological examination, utilizing manual muscle testing to identify subtle shifts away from optimal neurologic status". Attention was given to the 3 diaphragms, cranial, thoracic and in particular the pelvic, which forms the floor of the abdominal cavity and is associated with sacral motion. Adjustments of the sacrum and uterus allowed a (neurological) reorganization process that involved all three diaphragms, addressing nerve interference and allowing the body's innate intelligence to promote restoration and healing. The woman in this study was diabetic and amenorrheal, and never had unassisted menstrual cycles (on birth control pill therapy), 4 months after starting care, unassisted cycles started and within another 16 months she became pregnant through natural means.

Shelley contributes a case study applying Directional Non-Force Technique (D.N.F.T.),<sup>34</sup> a high speed, low force impulse approach, utilizing "leg reflex" in locating subluxations and a light thumb thrust in delivering adjustments, addressing both bony and soft tissue. The goal is to only adjust a primary subluxation, allowing compensatory misalignments to resolve spontaneously once the primary nerve disturbance is eliminated, promoting proper alignment to the vertebrae and increasing the potential for health regardless of the presenting complaint. In this instance, infertility may be associated with restrictions of sacral movement, which alter the flow of cerebrospinal fluid and may impact the hypothalamus and/or the pituitary gland,

affecting production of hormones vital to reproductive function. Medical tests documented functional changes in estrogen levels, endometrial thickness and cervical mucus prior to and after the application of chiropractic care, all were at more favorable levels after care and the subsequent IVF cycle was successful.

Network Spinal Analysis (N.S.A.)<sup>35</sup> care utilizes low force touch, applied at spinal gateways to assist the brain to connect more effectively with the spine and body, and as a consequence, the individual develops new strategies for living and healing. Care is advanced through a series of levels. Senzon describes the possible role of N.S.A. care in relation to sympathetic tone, the menstrual cycle and the hypothalamus, with specific attention on the pulse generator. The author documents detailed physiological changes in a poor responder undergoing multiple cycles of IVF, pre and post the application of N.S.A. care.

The application of Gonstead Technique<sup>36</sup> is described by Lyons in a case study regarding a 27 year old athletic woman with a 5 year history of infertility. The Gonstead approach benefits from the mechanical engineering background of its founder, who developed the "foundation principle" to explain how a fixation in one area of the spine created compensatory bio-mechanical changes and symptoms in another. Based on tonal, postural and segmental models, and attention is directed to the integrity of the disc. Initial evaluation and one month of care are described, after which the patient became pregnant. Diversified Technique<sup>37</sup> was used for a portion of the case contributed by Kaminski. It is a segmental model, the subluxation is described in terms as alterations in specific intervertebral motion segments. Parameters can include, but not be limited to, motion and static palpation, visual observation, Deerfield leg check and cervical syndrome test.

In a commentary by Ressel,<sup>9</sup> utilizing Stucky-Thompson Terminal Point Technique, we are offered a description of the process of response to a trauma, specifically a fall triggering a vertebral subluxation complex, associated with severe disc and osseous remodeling and affecting reproductive function, including proper function of the fallopian tube transportation system and ovulation mechanics. Essential for fertilization is the proper function of the fallopian tubes, whose muscles carry the egg to meet sperm, muscles which rely on the nervous system to control their actions. If function is suboptimal, Ressel's experience suggests a misaligned vertebra present in the lower spine, affecting this transport system and when corrected promotes proper function. In this article, a traumatic fall occurred at the beginning of this woman's reproductive years, however the response by the body was never effectively interpreted, her menstrual cycles subsequently halted and she spent her life infertile.

Previously published chiropractic research discussing infertility includes cases by McNabb (1994)<sup>13</sup> and Webster (1995).<sup>14,15</sup> McNabb describes a 36 year old infertile female with scoliosis and a history of deep pelvic pain and progressive dysmenorrhea, who became pregnant after receiving chiropractic care. He suggests her symptoms were "indicative of some physiological dysfunction" and the fact that the patient was unable to conceive while experiencing these pelvic symptoms further indicates some abnormal physiology" (no anatomical pathology

present). "It is also my impression, that the timing in the cessation of the pelvic symptoms and the ability to conceive was not coincidental".

Webster offers two cases:

- 1) A 32 year old infertile woman, no menses for 12 years, multiple medical infertility treatments were unsuccessful. After two months of chiropractic care, with attention on adjustments in the lumbar region, menses started and after regular cycles for four months, unassisted pregnancy occurred.
- 2) A 26 year old woman, infertile for several years, multiple medical infertility treatments were unsuccessful. Patient had a severe scoliosis with a Cobb's angle of 58 degrees. After 6 months of chiropractic care, with adjustments applied to sacrum, lumbar and cervical regions, the Cobb's angle decreased to 47 degrees, and one month later, unassisted pregnancy occurred.

### The Outcome

A variety of outcome measures were described by the authors in this issue, they include:

Health Status Questionnaire, computerized thermography and surface electromyography, protocols of each individual chiropractic art, documenting physiological changes in concurrent medical evaluations, and last but not least in this issue regarding fertility - babies.

Health Status Questionnaire (self rated) outcomes were documented in articles by Bedell and Senzon.

- Applicability - tracking QOL changes during the course of chiropractic care is relevant as an indicator of progress in well-being, also both stress and depression are reported irritants to fertility.
- Validity - this offered a tool where the subjects were allowed an active forum to note the results of care, and in effect, validate their experience
- Reliability - This reflects the consistency with which improvements are made, in subluxation-based approaches, care is consistent and progressive, not symptom-centric, and therefore offers the potential of true improvements, rather than irregularities of crisis care.
- Sensitivity - The assessments were designed for a lay person to successfully evaluate their experiences within a range of choices that is not stressful for them. It is not overly sensitive in that professional training is required to complete.
- Practical - Very, they are portable, and easy to incorporate within a care plan.
- Safety - Physically safe, and not intended to cause emotional and mental harm.

Computerized thermography and surface electromyography outcomes were documented by Anderson-Peacock, Bedell, Kaminski, Lyons, Ressel, Senzon and Shelley.

- Applicability - These are objective, instrument testing which detect and record increased aberrant autonomic and motor nervous system function. They are a tool to track progress while under chiropractic care.

- Validity - This tool documents and measures changes in patterns of subluxation.
- Reliability - These instruments are calibrated to provide consistency in application and results
- Sensitivity - these instruments are able to track patterns over time, and are designed to provide useful readings that are sensitive
- Practicality - Needing only a computer, they are portable and very practical for screenings. Utilized by many chiropractors, as reflected by the numbers of authors who used this to measure outcome.
- Safe - very safe, not an invasive test. Protocols of each individual chiropractic art are described in detail within their articles, we will not address here.

Outcomes in physiological changes documented in medical evaluations were reported by Senzon, Shelley and Ressel.

- Senzon
  - 3/26/02 - 1st IVF attempt, on cycle day, estradiol only 56%, LH was 6.6 I.U./L., attempt canceled due to poor follicle growth (poor responder to exogenous ovarian stimulation)
  - 4/11/02 - commenced regular NSA care
  - 6/06/02 - 2nd IVF attempt, increased estradiol, and LH, 10 eggs retrieved
  - 6/17/02 - successful aspiration of eggs completed and pregnancy followed
- Shelley
  - 10/17/2001 1st IVF attempt (unsuccessful)
  - 11/03/01 enter chiropractic care early Feb'02 - endometrial thickness greatly improved, estrogen and cervical mucus at more favorable levels
  - 02/17/02 - 2nd IVF attempt
  - 03/02/02 - positive pregnancy test
- Ressel
  - at 18 years old, menstrual cycle ceased (cycle was altered and then ceased after a traumatic fall)
  - at 65 years old, enter chiropractic care
  - in approximately 4 weeks, spotting start and was referred for endocrinology work-up

- work-up confirm no pathology, cycles resumed, advise to use birth control

And last, but not least, we document the pregnancy time frame for infertile women in this issue, after receiving chiropractic care and possible associated improvement in physiological function. See Table 1.

Several of the authors note the inclusion of additional health care models to assist the transition initiated by chiropractic care to restoring health and function with ease, they include: Adams - nutritional evaluation and support, Bedell - assessment and monitoring of nutritional and emotional needs (i.e. stress reduction techniques), and Shelley - patient visited Acupuncturist for 4 visits.

Dr. David Simon of The Chopra Center writes "Infertility may result from altered regulation of pituitary hormones, or from abnormal nervous-system influences on the ovaries and fallopian tubes".<sup>20</sup> What these outcomes suggest is, regardless of age, history or previous intervention, after the normalization of neurologic activity from the application of chiropractic care, proper nervous system influence was allowed to occur with a possible associated impact on fertility. Controversial? There are numerous researched articles which document this mechanism in the relationship between normal neurological activity and improved female function regarding the menstrual cycle.<sup>38-42</sup> For controversy we shall proceed to...

### The Controversies

What are the great debates taking place, some stirred, some stirring, what topics here provoke thought and discussion? When considering parenthood or struggling with unsuccessful attempts at pregnancy, several public health issues emerge from this most personal topic - age, safety and money.

Age, a perennially socially charged issue, has been elevated to a dilemma when viewed in context of fertility. In FY'00, a massive ad campaign by the American Society of Reproductive Medicine (ASRM),<sup>26</sup> was launched, including an age-centric message that indicated infertility is a disease and those primarily affected are women in their mid-thirties and up. The ads provoked outrage and criticism from experts in many fields,

**Table 1**

Author	Age	How Long Infertile	Time between start of chiropractic and Pregnancy
Adams	22	Primary Amenorrhea	w/in 4 months start unassisted cycles, 20 months pregnant
Anderson-Peacock	36	9 yrs	within 3 months
Bedell	35	2 yrs	within 2 months
Blum	27	2 miscarriages in 6 mo.	App. 3 months (and carried to term)
Kaminski	32	7 yrs	After body recover from 12 yrs of unresolved colitis (take 1yr., pregnant 1 month after)
Lyons	31	>1yr	diagnosed with "lazy" reproductive system
Nadler	27	5 yrs.	3 months start regular cycles, app. 6 mo. pregnant
Ressel	42	perimenopause	App. 1 month
Rosen	27	amenorrhea since 18	In 5 weeks, cycle shift from 24-26 days with 8-10 Days flow to 29-30 days, w/in months - pregnant cycles restart in app. 4 weeks
Senzon	65	always	app. 4-5 weeks
Shelley	34	IVF	see above
	32	2 yrs - IVF	see above

including a government demographer specializing in reproductive health, as reports indicate their statistical overview was shaped for advertising copy, not shaped from independent research.<sup>43</sup> The ASRM defended its actions by suggesting their campaign was preventative, and likened it to dentists encouraging people to use fluoride. The former president also revealed the tone was strategic, to satisfy a goal of putting pressure on insurance companies to cover more infertility treatment.

The rates for first births for women in their thirties and forties have quadrupled since the 70's, instigated by changes in culture, both lifestyle and work. What would happen to the American economy and creativity if women felt more pressure to produce a family first rather than produce a career and left the work force in significant numbers to have babies in their 20's and 30's? Or if they all expected to bring their babies to work, could corporate America support their workers and create an environment that is family friendly?

Social and economic issues notwithstanding, what really drives these issues is health. The Mind/Body Medical Institute, which is under the direction of Harvard Medical School, in their Infertility Program brochure offers "Our typical patient is married, in her mid-to late-thirties, has been trying to conceive for three years, and has finished the infertility work-up and basic treatment. Many patients are either contemplating high-tech treatment or have had failed cycles. The average patient reports two-three physical symptoms, which have become worse since the infertility,..."<sup>44</sup> This information is very telling, these women have physiological changes including symptoms and infertility, which are chronic and progressive, that medical infertility intervention has not succeeded, and they are in their 30's. Dr. Andrew Weil addresses the issue of fertility and age with this comment, "Chances are a healthy couple will be able to conceive even after fertility begins to wane. It may just take a little longer".<sup>45</sup> Perhaps the real controversy is not age at all, but the basic health of these women, how and why has it deteriorated over time, and what type of care could offer them benefits?

**Safety.**

Recent reports indicate that there is currently "no central registry to track birth defects among babies conceived through so-called assisted reproductive technologies, even though about 40,000 babies in the United States were conceived with IVF".<sup>46</sup> While all drugs and invasive procedures have potential side effects, this confirms there is no documentation on the effect that these interventions have, and how many generations they impact, an issue of some concern as common does not equal safe.

A study published in November 2002 in the online version of the *American Journal of Human Genetics*<sup>47</sup> reported that "babies conceived by in vitro fertilization may be at increased risk for a rare genetic disorder that predisposes them to cancer". The study, conducted by scientists from the Johns Hopkins School of Medicine and Washington University in St. Louis tracked children born with Beckwith-Wiedemann syndrome and discovered a statistically significant association with conception by IVF. Beckwith-Wiedman syndrome children are at a high risk for developing cancers of the kidney, liver and other tissues prior to puberty, as well as being born abnormally large

with large tongues and poor closures of the abdominal wall, associated with hernias and necessitating surgical repair. The authors indicate these findings are compelling and should lead to further study.

In addition to considering the safety of any chemical or invasive intervention, there is also the issue of the safety of health procedures that are symptom-centric, rather than addressing the cause of physiological dysfunction, allowing the public to walk around in a symptom reduced state of dysfunction. As noted by the preceding quote from the Mind/Body Medical Institute's profile and by the described health histories of the 12 women involved in these new retrospective studies, women suffering from infertility also suffer from other symptoms, exogenous hormonal stimulation doesn't address this. A case study by Rosen demonstrated that a woman had previous IVF treatment for her first child, but there was no improvement in her other distortions or her ability to become pregnant between that intervention and her second child until she received chiropractic care. 100% of the women in this issue had a reduction of physiological dysfunction, evident by both subjective and objective findings after chiropractic care. This is not to be dismissed.

**Money**

In addition to any possible emotional expense, Infertility treatments can incur significant financial hardship. Articles in the popular press report on women spending \$3,300 in one month on injections,<sup>21</sup> Egg donation procedures can run about \$25,000,<sup>48</sup> Mind/body infertility two-day retreats (400 individual, 750 couple + hotel),<sup>44</sup> etc. For many couples this is not realistic, and again, there are the additional symptoms of physiological dysfunction that need evaluation and care, and all of this needs time. The public deserves to know about natural, cost effective, safe approaches that can help promote and restore health.

A contributing factor as to why many women experiencing infertility are not aware of the benefits of chiropractic care is the paucity of research funding allocated towards chiropractic, which is completely out of sync with the utilization and value of chiropractic within the healthcare system, it is the largest and fastest growing form of non-medical healthcare. Some controversial statistics:<sup>48</sup>

Category	Chiropractic	Medicine
Funding by	In 107 years, total 10 million	in 2000 alone, just the top 25 medical schools
U.S.Gov.		received 6 Billion
Medicare	0 dollars to train residents	Beth Israel alone receives \$57,010 per resident per year
F/T researchers	<100 total (app. 70)	Pfizer alone has app. 12,000

While of special value to those couples suffering with infertility, these controversies are worthy of engagement by a broader audience, and leads us to consider...

## The Future

Biology is our biography, our body tells the story of our life, our heritage and where we've been, it reflects our present experiences and offers a window into our potential for the future. Research is a formalized accounting of the relationship between biology and biography.

This issue offers an account of women who's biology expressed infertility, the diversity of their biographies, i.e. ages, circumstances and external interventions, and an exploration of what chiropractic offers to these women. In essence, what chiropractic offers is not an intervention, what chiropractic offers is a culture.

Chiropractic offers a culture where the innate wisdom of the body is recognized, and determines principles and practice. A culture that is a distinct science, art and philosophy, that promotes natural function and potential. The Chiropractic culture offers an approach that is drug free. A culture free from the burdens of drug side effects and financial challenges. Chiropractic offers a culture that works, the new moms described in this issue joins millions of others that benefit from chiropractic care.

In attempts to understand and categorize chiropractic, those outside this culture often relate it to what's familiar to them - the world of management of pain/disease/symptoms, when in essence chiropractic is a distinct model and not able to be fully grasped from such a perspective. And hence, the public is offered back pain guidelines by medical reviewers<sup>49</sup> or insurers, and part of the value of this study is to interrupt that misperception.

The tracks for understanding health have been defined by the well worn tracks of disease-centric care, and in efforts to move forward, many use this track for speed to attract attention to their cause. Even the advent of "Alternative Medicine" is generally a track to address symptoms and disease, rather than to promote potential, generating a form of health illiteracy. The tracks for well-being and potential, for recognizing, quantifying, promoting and protecting this approach are not yet built on a broad level, but they have been alive in chiropractic for 107 years.

While many members of the public, press and health care providers are raising their voices and concerns about the tremendous funding and consideration funneled with priority to a prescription-based approach to health care, the results of this attention have yet to be fully actualized. In a fuller discussion of defining health or separation from health, and how complex and elegant the being part of human is, why is understanding limited to disease - consider interference, why is understanding limited to symptoms - consider insult, why is understanding limited to diagnosis - consider process, and finally why is understanding health limited to how much time and money is spent on being sick, consider spending energy and time to promote natural adaptation and function.

Chiropractic's natural approach to promoting health and well-being, is not solely a romantic or intellectual venture, far from it, this viewpoint has an impact on the economy, both national and personal, and on lives, family's lives. One factor that increases health care expenses is the amount of time involved in

finding a provider or approach that can truly interpret what care is needed, there are many who spend years with physiological dysfunction, searching for an answer. The women described in these articles spent years, even decades, living with dysfunction, how much money, time, performance and well-being was lost along that path, and by how many millions is that multiplied by each day?

In closing, my recommendations are:

- 1) Advocate more research on wellbeing and function, and the development of associated assessments and outcomes
- 2) Encourage greater health literacy in the public as well as with those involved in healthcare, which includes approaches that promote well-being and potential, distinct from disease-centric models
- 3) Develop well-designed studies on the number of women/men in chiropractic care with physiological changes including but not limited to changes in reproductive function
- 4) Encourage those considering parenthood to have a chiropractic evaluation during the preparation phase of pregnancy, as parental health and wellness influences reproductive success and sustainability
- 5) A call for deliberate and speedy action to address the extreme inequity in research funding for chiropractic.

And finally, for those within the culture of infertility, this body of work offers for your consideration, documentation of a variety of articles describing the improvement in reproductive function after the application of chiropractic care. We welcome any comments, feedback or discussion on this work.

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