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# RECLAMATION IN MOTION:

# AN EXPLORATION OF YOGA AS AN ADJUNCTIVE TREATMENT FOR WOMEN SEXUALLY ABUSED AS CHILDREN

A Clinical Dissertation

Presented to the Faculty of

The California School of Professional Psychology

San Francisco Bay Campus

ALLIANT INTERNATIONAL UNIVERSITY

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Doctor of Psychology

By

Jessica Michaelson

October 2005

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This clinical dissertation, by Jessica A. Michaelson, has been approved by the committee members signed below who recommend that it be accepted by the faculty of the California School of Professional Psychology – San Francisco Bay Campus in partial fulfillment for the degree of

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# ABSTRACT

## RECLAMATION IN MOTION:

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Childhood sexual abuse (CSA) can lead to severe disturbances in a survivor's experience of her body, involving both physiologically and psychological aftereffects. Many of the symptoms related to CSA trauma involve the body, including anxiety, dissociation, somatization, substance abuse, eating disorders, and self-injury. Traditional psychotherapy models do not adequately integrate the client's somatic experience into the therapeutic process. This paper explores yoga as an adjunctive intervention that focuses on the survivor's bodily experience within the context of trauma treatment. Yoga's appropriateness as such an intervention is analyzed from the perspectives of trauma therapy models and somatic therapy models. Guidelines for incorporating yoga into a traditional treatment plan that addresses the specific symptom clusters of CSA trauma are provided.

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# I. Introduction

Childhood sexual abuse (CSA) is one of the most frequently studied and discussed childhood traumas in psychological literature. For over 100 years, psychiatrists and psychologists have struggled to understand the complex trauma involved in such abuse and to develop efficacious therapeutic interventions for survivors. Since the late 1880s, when Pierre Janet first studied the experience of CSA in hysterical female patients, it has been clear that the traumatic sequelae include a spectrum of body-related problems. Unfortunately, traditional psychotherapies used with trauma survivors focus on cognitive and emotional factors and often fail to address the somatic dynamics of sexual abuse and the resulting somatic symptoms. Although somatic interventions exist, they are rarely cited in the popular psychological literature, lack a strong foundation of empirical research, and remain somewhat inaccessible to mainstream trauma therapists.

Recently there has been a surge of interest and discussion about the need for well defined somatic methods that can assist therapists in creatively treating traumatized clients. Leaders in this trend assert that somatically based treatments can foster stability, containment, symptom reduction, personality integration, and life enhancement (Herman, 1992; Janet, 1889; Van der Kolk & Fisler, 1994). A handful of somatically oriented approaches to trauma treatment exist that are implemented within the therapy room and require specialized training ( Eckberg, 2000; Kurtz, 1990; Levine, 1997; Marcher, Ollars, & Bernhardt, 1990; Ogden, 2003; Rothschild, 2000; Shapiro, 1989). In addition,

some clinicians refer clients for adjunctive somatic treatments such as massage, meditation, mindfulness training, bodywork, physical exercise and dance. The current study contributes to this body of literature by exploring yoga as an adjunct somatic intervention that has been overlooked within psychology and which may serve as a viable alternative for trauma therapists seeking to provide comprehensive treatment to CSA survivors.

*Statement of the Problem*

In 2002, 88,000 cases of child sexual abuse (CSA) were reported to child protective services, accounting for 10% of all reports (Department of Health and Human Services, 2002). Adjusted prevalence rates in the United States are 16.8% for adult women and 7.9% for adult men. 71% to 78% percent of all survivors are girls, who are abused at younger ages and for longer periods of time than boys (Putnam, 2003). Studies of sexually abused children have shown that approximately 60% suffer from a variety of short-term effects including fears, anxiety, depression, guilt, shame, anger, sleep and eating disturbances, and inappropriate sexual behavior (Browne & Finkelhor, 1986; Putnam, 2003).

CSA is considered a shock trauma which overwhelms the victim beyond her ability to cope, leading to a state of physiological and psychological shock (Eckberg, 2000). Shock trauma is differentiated from developmental trauma which involves environmental failures to support healthy developmental gains. When a shock trauma occurs during critical developmental periods, as in CSA, shock and developmental traumas overlap and the shock response informs the child's personality development.

Such interplay between shock and developmental stage may explain the "sleeper effects" found among CSA survivors, in which disturbances emerge as severe dysfunction in adolescence and adulthood (Beitchman, Zucker, Hood & DaCosta, 1992). As the survivor matures, the effect of the abuse may manifest differentially, and may play a role in her adult personality and psychological patterns. Interestingly, those children who present with the fewest symptoms shortly after the abuse have been found to be the first to develop symptoms of psychopathology in adolescence and adulthood (Putnam, 2003). Female adult survivors are overly represented in clinical populations and present with problems in physical, mental and emotional health, self perception, sexuality, and interpersonal and social functioning (Beitchman, et al., 1992; Briere & Runtz, 1987; Browne & Finkelhor, 1986; Putnam, 2003). The prevalence and perniciousness of such adult symptomatology make CSA a serious public health problem which challenges mental health clinicians and systems.

Bessel van der Kolk, a neurologist and preeminent authority on childhood trauma, has joined somatically oriented psychologists by acknowledging within mainstream psychology literature that treatment must begin with attention to the body. He explains that body-oriented therapy is essential to effective treatment because it fosters a sense of physical mastery, which allows the CSA survivor to feel in charge of her somatic and emotional reactions. This mastery is a prerequisite to being able to engage in the therapeutic processing of trauma related emotions and memories (van der Kolk & Fisler, 1994). He charges therapists with the responsibility of helping the client stay physically focused,

interpret her somatic feedback reactions, and tolerate physical sensations without becoming overwhelmed. Specifically, he suggests that therapists help survivors recognize tactile sensations in their own skin, locate their bodies in space and time, define their bodily boundaries, self-soothe, and be able to identify, integrate and articulate the sensations in their bodies (Streeck-Fischer & van der Kolk, 2000). Through these body-oriented interventions, the client gains the skills to be able to process and integrate their traumatic experiences and move from a sense of helplessness to mastery (van der Kolk & Fisler, 1994).

While the goals of body-oriented therapies are well defined, the literature on theory, technique or applicability of such therapies to CSA survivors is limited. The techniques that are available include verbal therapies in which the body is discussed, art therapies where clients draw or use other art materials to represent the body, somatic therapies which bring attention to physiological experiences, and movement therapies in which physical movement is used to experience and understand the body. Goodwin and Attias (1999), in their text *Splintered Reflections: Images of the Body in Trauma*, suggest that the body be incorporated in therapy through verbal channels, including attending to the client's somatic sensations during the session or having conversations about the client's bodily needs and functions, and through written language, by journaling and writing about their bodily experiences. They recommend that art and movement therapies be used as adjunctive interventions to bypass the mind's defense mechanisms and access somatic memories and sensations which can then be processed and integrated through verbal therapy. They caution that non-

verbal adjunctive therapies be tailored carefully to the individual and the stage of treatment in order for them to be useful and not re-traumatizing.

In their list of recommended adjunctive body-oriented therapies, Goodwin and Attias (1999) identify yoga as a possible physical exercise to foster relaxation and meditation. Yoga, a comprehensive, ancient Indian philosophy of daily living, involves multiple branches including morality, spirituality, and physical health. Most popular in the United States, and most associated with the word *yoga*, is *hatha yoga,* the systematic use of physical postures (*asana),* and breathing (*pranayama*) for physical and mental well-being. While hatha yoga was developed and is practiced as a form of physical and psychological intervention for healing, it is rarely mentioned in western psychological literature. However, in the past few decades, and in the past few years in particular, there has been a growing popularity and interest in yoga and its multitude of physical and mental health benefits. With this popularity, some psychologists have begun to explore yoga's usefulness as a somatic therapy, as is evidenced by its recommendation as an adjunctive treatment for childhood sexual trauma.

To date, there is little credible research on yoga's efficacy as a psychological intervention. Yoga literature expounds upon the psychological and spiritual benefits of yoga, however, these assertions are most often based on concepts of spirit and energy which are difficult to translate into empirical psychological concepts. Fortunately, the more concrete, existential processes of yoga, simply moving and breathing with mindful awareness, have been shown to provide measurable mental health benefits (Kabat-Zinn, 2003). Therefore, the

current project will focus on the empirical elements of yoga practice that make it a viable somatic intervention. By exploring the theory and techniques of yoga, along with the empirical findings about its clinical use, and evaluating this information within the larger framework of established body-oriented therapies, this study aims to identify yoga's benefits as an adjunctive treatment for the complex trauma of childhood sexual abuse.

The current study proposes that yoga be used as an adjunctive to talk therapy, with the therapist prescribing a yoga practice outside of the therapy hour. Unlike other somatic interventions which require the therapist to provide the intervention in session, or specialized movement therapies which may be difficult to find in many communities, yoga is a popular form of exercise available in many communities and through various media, thus making it accessible and practical for traditionally trained therapists.

*Organization and Structure of the Study*

This study is based on existing psychological literature, as well as yoga literature from professional and popular sources. Chapter 1 provides an analysis of the dynamics of CSA which distinguish it as a traumatic life event with long term deleterious effects. Chapter 2 contains a theoretical exploration of the body's role in CSA trauma and consequences from physiological and psychological perspectives, which are applied to the conceptualization of a variety of body-related clinical syndromes in Chapter 3. Chapter 4 outlines the standards of care for CSA trauma. Chapter 5 describes the body-oriented therapies currently used in the treatment of CSA and other trauma. Chapter 6

and 7 review the literature on the theory of yoga and its physical and mental health effects. Lastly, Chapter 8 provides guidelines on how to incorporate yoga as an adjunctive treatment within a traditional therapeutic treatment plan. Hopefully, this exploration of the psychological relevance of yoga to CSA survivors will provide a greater number of therapists with creative treatment options as they struggle to provide effective care to this population.

## II. The Trauma of Childhood Sexual Abuse

At the most basic level, childhood sexual abuse (CSA) involves any sexual interaction between a child and an adult that is undertaken for the satisfaction of the adult. While this definition appears unambiguous, there has long been debate around the specifics of age, relationship, and behaviors that constitute sexual abuse. Researchers and theorists have attempted to define the conditions necessary for the sexual activity to constitute abuse, specifying how young the child must be, the level of closeness in the relationship between the child and adult, and the degree of physical contact in the sexual activity (Beitchman, et al., 1992; Golding, 1999; Putnam, 2003).

Finkelhor & Browne (1985) assert that these particulars are less critical to an abusive condition than certain qualitative dynamics in the relationship. In this conceptualization of sexual abuse, there are three conditions of a sexualized exchange between a child and adult that together or separately may create an abusive dynamic:

1. The abuser is in a position of power or authority over the child, and therefore exploits that power in order to engage in sexual activity,
2. The abuser is much older or more mature than the child, which confers power, and allows for exploitation,
3. The abuser uses force or manipulation to carry out sexual activity.

This broader conceptualization is more likely to reflect the experience of the child and provides a framework for recognizing sexual abuse as traumatic regardless of situational specifics.

However, even while recognizing the exploitation involved, some have questioned the causal relationship between sexual activity with an adult in childhood and subsequent trauma. Throughout history, most abusers and some scientists have argued that such activity is mutually pleasurable, even beneficial for the child, and therefore not necessarily abusive (see Masson, 1992, for a complete review).

As recently as 1953, Kinsey dismissed the trauma of CSA in his infamous report of female sexuality. One quarter of 1,075 female respondents reported sexual activity in childhood with a significantly older man, and 80% of these women reported being frightened, shocked or emotionally upset by the experience. He dismissed these fearful reactions as inappropriate, stating, "It is difficult to understand why a child, except for its cultural conditioning, should be disturbed at having its genitalia touched, or disturbed at seeing the genitalia of other persons, or disturbed at more specific sexual contact" (Kinsey, 1953, p. 20). Following this report, many studies were conducted confirming the negative effects of CSA, but these studies often attributed the trauma to the mother's hysterical, neglectful, or collusive reaction (Masson, 1992).

The rise of the feminist movement initiated a critical analysis of these reports, questioning the role of power and social privilege in CSA and related research. Feminist researchers acknowledged that the majority of abuse is perpetuated by men, that victims are overwhelmingly female, and that this gender inequality has led to the suppression of accurate research regarding CSA (e.g., Brownmiller, 1975; Herman, 1981; Price & Armstrong, 1978).

Since the 1970's, CSA has become one of the most researched forms of childhood abuse, and has been well-established as a far reaching phenomenon with complex and long-term traumatic effects. A review of controlled empirical studies found that up to 66% of sexually abused children have significant emotional and psycho-social problems, with 14-40% of those having severe psychopathology (Browne & Finkelhor, 1986).

The negative impact of CSA extends into adulthood, with some effects not surfacing until later in life. A review of large-scale randomized community surveys found that adult survivors of CSA have a significant likelihood of experiencing serious psychological problems at sometime in their adult lives. Over half of CSA survivors reported some to great negative effect on their well-being, with 20% reporting serious psychopathology (Alpert, Brown, & Courtois, 1998).

Factors related to the severity of traumatic effects in children and adults include:

- Age of the child at onset – preverbal and post-pubertal children having the most severe reactions,
- Greater duration and frequency of abuse,
- Greater degree of physical violation, force, and threat,
- Age, gender, and relationship of abuser - older father- figures having most potential for trauma, and
- Lack of assistance or negative response upon discovery or disclosure (Alpert, Brown, & Courtois, 1998).

While these factors increase the likelihood of more severe pathology, they are not necessary conditions for the survivor's experience of serious after-effects. According to the American Psychiatric Association, if the factors involved in the sexual abuse create a situation in which the child feels sufficient threat to her life or physical integrity, it meets the requirements for a shock trauma which can create post-traumatic stress disorder or symptoms (APA, 2000). Classified as a shock trauma, CSA is distinguished from developmental trauma, or an interference with a child's cognitive and emotional development which impairs personality formation (Eckberg, 2000). Unfortunately, this distinction between shock and developmental trauma does not accurately reflect the common dynamics of sexual abuse. While the physical act of sexual abuse provides a shock, the transgression by a trusted adult and the possibility of an ongoing sexual relationship can impair the child's personality development. Therefore, CSA can be perceived as a shock trauma, which creates post-traumatic symptoms, *and* a developmental trauma which affects the survivor's personality and life experience.

This interaction between shock and developmental trauma may explain the vast range of psychological problems seen among CSA survivors. While there is no dominant cluster of symptomatology, there is also virtually no general psychological condition that has *not been associated* with CSA. One study comparing incest survivors in a community clinic with inpatient psychiatric patients without histories of CSA using the Diagnostic Interview Schedule, found that the incest survivors were more likely than non-abused inpatients to suffer

from 24 out of 26 psychiatric diagnoses, with the exceptions of gambling and anorexia (Pribor & Dinwiddie, 1992). Below, Table 1 lists some of the cognitive, affective, personality, behavioral, and health problems associated with CSA.

Table 1

*Psychological and Health Sequelae of Childhood Sexual Abuse*

| Cognitive and Affective Problems | Personality, Behavioral and Interpersonal Problems | Health and Medical Problems |
|---|---|---|
| Depression | Borderline Personality | Sexually Transmitted |
| Anxiety | Histrionic Personality | Disease |
| Post Traumatic Stress | Eating Disorders | Premature Pregnancy |
| Dissociative Disorders | Substance Abuse | Chronic Pain |
| Somatization Disorders | Self-Injury | Genital Infections & |
| Fear | Prostitution | Diseases |
| Guilt | Revicitimization | Immune Dysfunction |
| Shame | Interpersonal Distrust | Chronic Illness |
| Low Self-Esteem | | |

This list illuminates the prevalence of body-related problems among CSA survivors. In addition to the direct health problems, survivors suffer from a variety of psychological problems that are essentially somatically based, such as somatization disorder, eating disorders, substance abuse, and self-injury. A theoretical discussion of the most somatically relevant psychological symptoms is presented in Chapter 3. Because the nature of the trauma involved the child's body on many levels, from being perceived as the cause of the abuse to being the location of the pain and violation, the prevalence of such somatically based

problems is not surprising. This prevalence warrants the exploration and development of accessible, clinically sound somatic interventions that can be incorporated into a traditional treatment plan. With the appropriate tools to identify and process the role of the body in CSA and its sequelae, a therapist will be able to provide more comprehensively supportive treatment to survivors.

## III. Childhood Sexual Abuse and the Body

Psychological research has well established the cognitive, emotional and behavioral impact of childhood sexual abuse on adult survivors, but has paid little attention to these survivors' somatic experiences. The research that does address somatic effects of CSA has been conducted primarily within two disparate sub-fields of psychology, neurobiology and psychodynamics. Neurobiologists have focused on the physiological and anatomical sequelae of CSA, while dynamic psychologists have detailed the enduring intrapsychic perceptions of the body after sexual trauma. The purpose of this chapter is to explore current findings on CSA and the body from neurobiological and psychodynamic perspectives in order to provide an integrative perspective for understanding survivors' somatic symptoms.

### *Physiology of CSA Trauma*

The physiology of CSA trauma involves a disturbance in the brain's stress response system. The hypothalamic-pituitary-adrenal axis (HPA) is the physiological system that underlies the basic human stress response. The hypothalamus is part of the limbic system located in the center of the brain between the brain stem and cerebral cortex that regulates instinctive behaviors and survival responses. When the senses receive information that the cortex perceives as threatening, the hypothalamus releases corticotrophin releasing factor (CRF), which triggers the release of adrenocorticotropin releasing hormone (ACTH) from the pituitary gland, which in turn stimulates the release of cortisol from the adrenal glands. This chain reaction activates the sympathetic nervous

system (SNS) by releasing catecholamines which increase blood flow, muscle tone, and reaction time, preparing the person to deal with the potential threat by fighting back or fleeing the scene. The release of cortisol into the blood stream assists in this fight-or-flight response by maintaining blood volume, triggering the release of adrenaline to maintain energy, inhibiting immune and inflammatory responses during an attack, and providing a feedback mechanism so that the stress systems are not overloaded and can remain effective. Once the threat has passed, cortisol assists in returning the nervous system and HPA axis to pre-threat homeostasis (Scaer, 2001; Teicher, Anderson, Polcari, Anderson & Navalta, 2002).

In traumas such as sexual abuse, the victim does not have the opportunity to fight back or flee from the scene and may respond by freezing. In these situations where threat is inescapable or prolonged, the parasympathetic nervous system (PNS) is believed to be activated in addition to the sympathetic nervous system and the HPA axis. In this state of immobilization or "freezing" in the face of terror, blood flow, pulse and respiration slows, tense muscles become still, the alert mind becomes unfocused and pain-relieving endorphins are released (Scaer, 2001).

Research into the neurobiology of CSA survivors suggests that sexual trauma during childhood may negatively affect the HPA axis and other systems involved in the automatic fight-flight-freeze stress response. These various changes are attributed to conditioned adaptive responses that develop in response to the repeated experience of inescapable, traumatic threat. Trauma

research has repeatedly identified that isolated incidents of acute threat and abuse result in higher cortisol levels in children and adults (see Southwick, Yehuda, & Wang, 1998 for a review). This increase in cortisol is attributed to an adaptive hypereactivity of the HPA axis in order to perceive and respond to subsequent threat (Yehuda, 1997). Such increases are associated with depression, anxiety, mania and psychoses (Southwick, et al., 1998; Weiss, Longhurst, & Mazure, 1999). Interestingly, recent studies have found that survivors of chronic trauma, including combat, torture and childhood abuse, have significantly *lower* cortisol levels than control during rest and when threatened (Southwick, et al., 1998). This hyporeactive stress response in survivors of prolonged trauma is attributed to an eventual down-regulation of the HPA axis as an adaptive response chronic hyper-stimulation (Yehuda, 2001). Lower cortisol levels have been consistently correlated with the severity of the trauma and the development of post-traumatic stress disorder (Southwick, et al., 1998).

To date, a handful of studies identifying the effect of CSA on survivor's HPA axis functioning, have supported the hypothesis that chronic trauma leads to HPA axis *hypo*reactivity. In a longitudinal study of sexually abused girls in a clinical setting, deBellis (1994) and his colleagues administered an ovine corticotrophin-releasing hormone (oCRH), which failed to trigger an increase in ACTH or cortisol. Measured over 24 hour periods, the abused girls had lower ACTH levels than controls and cortisol levels comparable to controls (deBellis, Chrousos, & Dorn, 1994). In another study using Department of Social Services referrals, cortisol levels taken from 5-7 year old girls who had been sexually

abused within the last month found significantly lower morning basal cortisol levels in abused girls than matched controls (King, Mandansky, & King, 2001).

In studies of adult female survivors, similar HPA axis down-regulation has been found. In one study, cortisol levels of survivors and controls were measured every 15 minutes for 24 hours, followed by artificial stimulation of CRF and ACTH (Bremner, Vythilingam, & Anderson, 2003). CSA survivors had significantly lower cortisol levels in the afternoon and evening than controls. As in deBellis's (1994) study of girls, women with CSA histories had significantly blunted ACTH reaction to CRF stimulation. However, there were not significant differences between groups in cortisol responses to CRF and ACTH activation. The women with lower afternoon cortisol levels were more likely to have been diagnosed with PTSD.

In a study of women who had been raped within the previous two days, those who had histories of CSA had significantly lower blood cortisol levels than controls, regardless of the severity of the recent rape. The women with CSA histories and lower cortisol levels were more likely to develop PTSD after the rape (Resnick, Yehuda, Pitman & Foy, 1995). Another study found that when dexamethasone, a steroid know to lower cortisol levels, was administered to women with and without CSA histories, it lowered survivors' cortisol significantly more than controls' (Stein, Yehuda, Koverola, & Hanna, 1997).

These repeated findings of lower base and reactive cortisol levels in CSA survivors suggest that the stress of early sexual trauma results in pervasive hyporeactivity of the HPA axis. The route by which this down-regulation occurs

is less clear. Some studies have found a decrease in CRF receptor sites and van der Kolk (2003) suggests that the hypersecretion of CRF during the trauma results in the pruning of receptor sites to prevent a maladaptive flooding of stress hormones. This decrease in CRF receptor sites may then explain the lack of ACTH and cortisol level increases in the face of artificially or stress-related increases in CRF. An alternative explanation involves an increase in ACTH and cortisol receptor sites, again in response to an abundance of CRF secretion during trauma. This increase in receptors has been found in various brain regions of survivors of chronic trauma and suggests that the increase was an adaptive mechanism to inhibit the flooding of stress hormones. While neither of these explanations has been formally confirmed, they both point to an adaptive means of managing stress by preventing the HPA axis from becoming overwhelmed.

This hyporeactivity of the HPA axis was adaptive when the survivor was facing constant threat and stress, but may be detrimental as a persistent style of responding to stress. Because cortisol both activates the stress response and inhibits it once the threat has passed, chronically low levels may impact a survivor's ability to respond to *and recover from* stress. As the stress hormone that supports the body's ability to fight or flee by maintaining energy and suppressing immune response, a lack of cortisol can result in the failure to activate a defensive response. Theorists have hypothesized that this reaction creates a learned helplessness in which the victim suffers the abuse without effectively responding, essentially relying upon the freeze response (van der

Kolk, 2003; King, et al., 2001). On the other hand, cortisol is an anti-stress hormone, which helps return the body to a pre-threat homeostasis, and insufficient amounts may result in a constant hyperarousal of the HPA axis and SNS which keeps the survivor vigilantly alert (Scaer, 2001). Chronically lowered cortisol responsivity may lead to simultaneous or alternating states of frozen helplessness and hypervigilance. These states are considered the bimodal benchmarks of traumatic stress disorders (Horowitz, 1976).

Another contributing factor in the dysregulation of the stress response system are catecholamine levels (Bremner, 2003). Catecholamines are neurotransmitters such as epinephrine, norepinephrine, and dopamine which stimulate the SNS in fight or flight by promoting muscle tone, blood flow, and arousal. Increased catecholamine secretion has been found in approximately two-thirds of all traumatized children and adults, and is directly correlated with the duration of the abuse (van der Kolk, 2003). Children with sexual abuse histories were found to have higher levels of epinephrine, norepinephrine, and dompamine than healthy kids and those with clinically significant anxiety disorders (deBellis, 1999). These increases are attributed to fewer receptor sites, resulting from chronic elevations in response to persistent threat (van der Kolk, 2003). These chronic elevations may be exacerbated by deficient cortisol available to inhibit catecholamine release once a threat has passed. Excessive catecholamines result in hyperactive SNS response, which can put the body in a constant state of arousal and can damage the central nervous system, physical organs, and the immune system (Teicher, et al., 2002).

Early irregularities of cortisol and neurotransmitters can have significant negative effects on brain development and function. Excessive glucocorticoids, the family of stress hormones to which cortisol belongs, have been found to decrease dendritic branching, increase neuronal loss, and inhibit neuronal regeneration in many regions of the brain that are essential to an effective stress response, including the hippocampus, amygdala, and corpus callosum (Bremner, 2003). The flooding of cortisol during times of critical brain development may create significant changes in brain organization.

The hippocampus is responsible for providing a spatial context and cognitive perception of a perceived threat. Three studies used magnetic resonance imaging (MRI) to study the neuroanatomy of CSA survivors and found a range of 5-16% reduction in the volume of the left hippocampus when compared to controls (Bremner, Randall, & Vermetten, 1997; Driessen, Hermann, & Stahl, 2000; Stein, Kolverola, Hanna, Torchia, & McClarty, 1997). Such reduction is attributed to excessive cortisol during times of critical development, which is hypothesized to have led to atrophy. This reduction in left hippocampal volume has been correlated with PTSD, dissociative identity disorder, increased cortisol suppression, lower verbal memory scores, trouble learning from negative experience, and difficulty with context-dependent memory (Bremner, 2003).

While the hippocampus develops slowly over the first five years of life, the amygdala starts functioning immediately after birth. The amygdala's role is to appraise sensory information and assess threat or danger. This assessment of

emotional danger plays a key role in creating an emotional and hormonal signal which initiates the HPA axis. In one study of young adult CSA survivors, MRI results indicated a 9.8% reduction in the size of the left amygdala (Teicher, et al., 2002), although such a reduction has not been found in similar investigations. Smaller left amygdala with more active right amygdala has been associated with irritability, hypervigilance, depression, and decreased activation of Broca's area, which controls speech (van der Kolk, 2003). As with the hippocampus, amygdala reduction has been attributed to extreme glucocorticoid circulation. In CSA, which may occur before the maturation of the hippocampus, the amygdala may be the brain region primarily responsible for assessing and interpreting threat. Therefore, the amygdala may be overly relied upon during the years of abuse, leading to excessive cortisol, and subsequent atrophy.

Brain imaging technology has found that when CSA survivors are presented with trauma related stimuli, the right amygdala is disproportionately activated. This activation of the right amygdala stimulates the HPA axis, which reacts to verbal or visual reminders of the trauma as if it were actually recurring (Teicher, et al., 2002). These findings were explained as the result of early reliance on the amygdala for threat assessment, which leads to quick, but irrational emergency responses, and prevents learning from experience that may occur if the cortex or hippocampus were involved in the assessment of threat.

Another neuroanatomical difference in CSA survivors is a significant decrease in the corpus collosum which connects the hempisheres of the brain (deBellis, et al., 1994; Teicher, et al., 2002). One study found that corpus collosi

in girls with sexual abuse were significantly smaller than in female survivors of other forms of childhood abuse (Teicher, et al., 2002). Again, the atrophy of the corpus callosum is attributed to an overabundance of glucocorticoids during critical periods. This reduction in the corpus collosum is associated with decreased communication between the hemispheres, which has also been found in CSA survivors. When asked to recall neutral and traumatic CSA related memories, survivors predominantly used the left hemisphere to recall the neutral content, and the right hemisphere to recall the traumatic memory. Women in the control group consistently had more integrated bilateral responses to both neutral and traumatic memory processing (Teicher, et al., 2002). These findings suggest that early abuse results in an increased lateralization of processing and decreased hemispheric integration. Poor hemispheric integration is associated with difficulties with physical balance, attention, and emotional regulation. Importantly, the intervention recommended for alleviating the discomfort of such difficulties involves exercise, rocking and movement, which help integrate sensory information with motor activity, using both sides of the brain (van der Kolk, 2003).

In summary, the early stress experienced by some survivors of CSA can have pervasive physiological and anatomical effects. The changes in the HPA axis may involve hyperactivity and hypersecretion of CRF, ACTH, and cortisol if the trauma was an isolated incident, but may result in insufficient secretion of stress hormones if the trauma was chronic and severe, as the child's body adapted to the chronic stress by down-regulating the stress response. Because

CSA tends to occur repeatedly, and the child is often unable to rely on adults to assist in the regulation of their stress, adult survivors frequently experience deficits in cortisol secretion, which may create problems with metabolism, immune function, nervous system function, and physical organs. Irregularities in cortisol can lead to increase production of catecholamines, which keep the body in an aroused and hypervigilant state, which may further stress the body's resources. Lastly, early trauma has been linked to atrophy among vital brain regions involved in effectively managing stress. Changes in the structure and physiology and the amygdala, hippocampus, and corpus callosum can create emotional dysregulation, poor impulse control, aggression, memory problems, hypervigilance, revictimization, and attention deficits. The accumulation of all of these neurobiological problems can result in the CSA survivor's experience of a total absence of mastery or pleasure within her body and mind.

*Psychology of the Body in CSA*

Long before medical technology made it possible to study the neurobiology of psychological experience, psychologists were speculating on the role of the body in the development of the self. Many fundamental theories of psychological development include the body as integral to the ego, psyche, and mind. According to these theories, the body's surface is the location of earliest psychological development, and trauma or violations of this surface may impair the developing ego and distort the relationship with the body itself. Clinical research on childhood sexual trauma repeatedly points to such ego and body-related distortions in adult survivors of CSA.

In 1923, Freud claimed that, "the ego is first and foremost a bodily ego; it is not merely a surface entity, but is itself the projection of a surface" (1923/ 1961, p. 632). It is through the body, according to Freud, that a child experiences the world, learns pleasure and pain, and distinguishes internal from external experiences. As these bodily sensations are experienced, the child becomes aware of the body, and develops a mental perception of the body as integral to the self. In a 1927 amendment to his original essay, Freud emphasized this role of the body, asserting, "the ego is ultimately derived from bodily sensation, chiefly from those springing from the surface of the body. It may thus be regarded as a mental projection of the surface of the body" (p. 636). In this claim, Freud recognizes the ego as essentially an extension of the child's early experience of her body; as the skin contains the body's internal experiences, so the ego contains the passions of the id. Based on Freud's hypothesized parallel relationship between the body and ego, the child's early experience of the body's permeability and containment will thus be reflected in the quality of her ego integrity.

Expanding on Freud's original concept of the ego as "a mental projection of the surface of the body," ego psychologists sought to define the process by which this bodily ego develops. Ego psychologist Federn (1952) defined the ego as a unification of mental and bodily sensations, with the bodily ego predicating the mental ego. Federn proposed that the bodily ego develops along with the child's growing perception of bodily sensations, and thus, "the child's original ego feeling extended only to sensations arising from the . . . erotogenic zones,

whereas bodily ego feeling similar to that of the adult is gradually developed later" (1952, p. 30). In normal bodily ego development, an adult's eventual perception of her body as a contained surface would extend to all areas of the body, and inform her mental sense of containment. Ideally, once the bodily ego is developed, the child is able to distinguish mental experiences from bodily ones, as well as external from internal events. However, according to Federn, if body parts are impinged upon before the child has developed an awareness of them she will have difficulty consolidating the violated areas into the bodily ego, and her overall ego development will be disrupted.

Winnicott (1975), in his theory of the developing self, using terms of mind and psyche, asserted that the psyche is, "the *imaginative elaboration of somatic parts, feelings and functions,* that is, of physical aliveness" (p. 244, italics in original). He hypothesizes that the development of a healthy self is predicated on the early development of an intact body schema, which provides a realistic mental image of the body, with reasonable limitations, and with clear boundaries of inside and outside. However, Winnicott claims that this development of a healthy self and body schema can be achieved only if there are no disturbances in the child's experience of her body. If such disturbances do occur, Winnicott proposes that there will be lasting problems in the person's perception of her body as well as her mind, psyche, and self.

In connecting the body to the development of the ego, psyche, and self, these theories inform our understanding of the role of sexual trauma in psychological development. Elaborating on the concept of a bodily ego, trauma

theorists have attempted to explain the mechanisms through which sexual trauma affects survivors at the bodily level. According to relevant theories of trauma, childhood sexual abuse impacts a survivor's somatic experience in two critical areas: physical boundaries and physical self-efficacy.

Theories which assert that sexual abuse distorts perceived physical boundaries follow directly from the psychodynamic theories of the bodily derived ego, which claim the body's surface provides a boundary for the physical and psychological self. Object relations theorists Grand and Alpert (1993) explain that, "the experience of impingements at the skin level threatens the infant/child with feelings of annihilation. This is a sense of having no skin to offer containment for the fractured bits inside and outside themselves" (p. 332). According to this concept, sexual abuse violates the child's sense of the skin as a boundary between herself and the outside world. In abuse that involves penetration, the abuser's body crosses the child's self-boundary, and may become perceived as part of the child's body (Attias & Goodwin, 1999). Regardless of penetration, insomuch as the child is unable to perceptually differentiate what is inside and outside of the body, the abuse may cause the adult survivor to perceive her body's boundaries as permeable, discontinuous, and fractured.

Part of a child's difficulty making sense of her bodily boundaries during sexual abuse stems from her inability to rely on an adult to help her understand what has happened, leaving her alone to create meaning of the experience. Because of the secrecy and manipulation involved in sexual abuse, the child

becomes reliant on her own immature cognitive faculties to modulate her arousal and comprehend the event (Streeck-Fischer & van der Kolk, 2000). In the abuse, the body's experience of pain and fear may be overwhelming, and if the child is unable to control this experience she may come to see her body as out of control. The child's inability to stop her abuse, pain, intense emotions, or sexual arousal, may be perceived as a betrayal by the out of control body (Attias & Goodwin, 1999). Furthermore, in the aftermath of the abuse, the child may continue to experience uncontrollable anxiety, depression, and fear which she cannot master through her own immature self-soothing strategies. The result of these continued overwhelming experiences may lead to the survivor's belief that her body is unmanageable, ineffective, and untrustworthy.

Unfortunately, the child seeks containment of her painful experience in a body that is already strained and fractured from the boundary violation of the abuse. Because she cannot rely on her body as an effective container for her overwhelming experiences, she may rely more heavily on her psychological and cognitive faculties to make sense of the abuse. The body was unable to shield her from the abuse and subsequent trauma, thus she may create fantastical shields to contain her experience (Attias & Goodwin, 1999). Attias and Goodwin (1999) categorized typical fantasies found in children with histories of incest, which provides frightening images of how children might make sense of their bodies and abuse. The categories include:

1) Incorporation experiences in which garbage, vermin, inanimate objects, body parts of the abuser, fantasized

> pregnancies, parent figures or other victims or their ghosts are felt as internal presences; 2) loss experiences including fragmentation, mutilations, amputations, holes or gaps, invisibility or transparency, soul-loss, disembodiment or emptiness; or 3) distortions including genital changes, dehumanization and size or age changes (p. 155).

Such elaborate fantasies highlight the child's ability to distort the body perception in order to make sense of the atrocities it has sustained. In addition to such distortions in body image, the child may come to see the body as no longer part of the self, essentially an exiled object to be rejected and dismissed (Young, 1992). Through these distorting and dissociative mechanisms, the child creates a relationship to the body that may have long lasting consequences for her later psychological functioning.

Researchers have sought to support these theoretical propositions about sexual abuse's impact on bodily perception in adult survivors. Various studies have found that adult survivors have more critical perceptions of their bodies characterized by qualities of poor boundaries, ineffectiveness, and distortion similar to those proposed by sexual trauma theory.

Two controlled studies compared adult CSA survivors to matched control groups along dimensions of overall body-image, bodily self-esteem, and connections between perceptions of the body and the self (Armworth, Stronck & Carlson, 1999; Wenninger & Heiman, 1998). Both found that survivors had significantly greater overall body dissatisfaction, and poorer evaluations of their

health and attractiveness. Survivors indicated a greater degree of critical feelings toward their appetite, waist, body build, profile, arms, chest, hips, feet, knees, posture, weight and sexual activity (Armsworth, et al., 1999). Such critical feelings were correlated with survivors' poorer self-images, and self-critical feelings about self-assertiveness, love life, sex appeal, fears, and tolerance. In Caucasian subjects, survivors also experienced less perceived effectiveness, greater interpersonal distrust, and less awareness of their bodily cues (Armsworth, et al., 1999). These findings support theoretical propositions that CSA impairs adult survivors' perceptions of their bodies, and that these negative perceptions of the body are correlated with their perceptions of themselves.

While survivors may experience general dissatisfaction with their bodies, research has found that they also have specific body image distortions related to the abuse (Arnella & Ornduff, 2000; Westerlund, 1992). In study of clinical subjects, researchers administered the Rorschach to adolescent CSA survivors and matched controls with psychological distress but no history of abuse (Arnella & Ornduff, 2000). The assessment used a scoring system developed to identify perceptions of bodily boundaries, and found that CSA survivors had significantly lower scores, indicating infirm, easily penetrable body images.

A study using interviews and questionnaires administered to adult incest survivors found that 74% (N=43) of their subjects had negative or distorted body images, describing their bodies as bad, dirty, evil, nasty, out of control and untrustworthy (Westerlund, 1992). Cluster analysis of interview data suggested

themes in survivors' perceptions of their bodies, including body hatred, lack of body ownership, lack of body control, and body estrangement.

Body hatred was associated with perceiving the body as the source of physical and emotional pain, and feeling that it is okay to abuse and damage the body. One survivor reported her hatred of her body before therapy, claiming, "my body never meant anything to me. It was used as a waste receptacle and I saw no reason to take care of it" (Westerlund, 1992, p. 53). Another connected her sexual behavior to body hatred, stating, "promiscuity was a way to beat up on my body which I hated and thought deserved to be denigrated" (53). This hatred supports the theory that sexual abuse leads the survivor to perceive the body as an object of betrayal which deserves punishment for its role in the abuse.

Several subjects reported feeling their bodies did not belong to them because of the abuse. As adults, they continue to feel separated, reporting," my body doesn't belong to me – it's as if because he possessed it, he owns it. It feels like a house I can be thrown out of at any time. . .my body isn't really mine. I just happen to be in it, but it's not as if it's my own" (p. 53). Lack of body ownership may be connected to both the violation of boundaries by the abuser and the child's need to disown the body in order to feel in control of her overwhelming experience.

Aside from not feeling ownership over the body, many survivors felt that they were not in control of their bodies and what they felt or did. One woman explained, "because I experienced pleasure in spite of all the negative emotions, I feel like I can't trust my body not to betray me. I can never know what it might

go and do on me" (p. 54). This lack of control is directly related to the theory that children who cannot make sense of their physiological experience during the abuse come to feel that the body is out of control and capable of betrayal.

Lastly, survivors reported estrangement from their bodies, essentially permanently detaching and disowning their physical experience. Survivors who feel estranged report, "I can't be in my body fully because I'm afraid to physically feel. . .My body is like a stranger to me, somehow disconnected from the real me. . .My body is somehow separate from me, unknown in some ways and mysterious" (p. 54). These women may have come to disconnect their bodies from their experience in order to function around the traumatic abuse.

All of these qualitative experiences of the body as a hated place to be avoided may have served a crucial survival function for these women during their childhood abuse. Because their boundaries were violated and they were left alone to manage the trauma of the abuse, disavowing the body and relying on other resources for psychological survival may have given these survivors some measure of control over their overwhelming experience. In addition, all of the negative memories and feelings of the abuse can be consigned to the body so that the mind and the self can go on without constant suffering (Young, 1992). Unfortunately, this adaptation of vilifying and separating from the body robs the survivor of all of the possible pleasures, joys, and comforts of living comfortably within her body.

## IV. CSA, the Body, and Clinical Syndromes

As mentioned earlier, there are essentially no clinical syndromes which have not been associated with a history of CSA. However, the problems with physiological self-regulation and psychological perception of the body resulting from CSA can lead to a cluster of somatically based symptoms. The cluster of syndromes discussed below - anxiety, dissociation, somatization and self-destructive behaviors - can be conceptualized as various manifestations of poor stress and arousal regulation within a body that is perceived as damaged and untrustworthy. An individual survivor may present with any combination of these symptoms, and a thorough understanding of their etiology and presentation is essential for providing comprehensive trauma treatment which addresses the somatic sequelae of CSA.

### *Anxiety: Hyperarousal of the Body*

Anxiety in adulthood is a well documented consequence of childhood sexual abuse. Studies of community samples have established that adult CSA survivors suffer from a variety of DSM-IV anxiety disorders at a significantly greater rate than women without histories of such abuse (Burnam, Stein, & Golding, 1988; Pribor & Dinwiddie, 1992: Saunders, Villoponteaux, & Lipovsky, 1992; Ullman & Brecklin, 2003).

Among a national survey of 5877 adults, 41% of CSA survivors met current criteria for post traumatic stress disorder (PTSD), characterized by chronic anxiety and hyperarousal (Ullman & Brecklin, 2003). CSA survivors are also more likely to meet criteria for acute stress disorder (ASD), which involves

the same symptoms as PTSD, but in response to a more recent trauma, suggesting that CSA survivors have recurrent anxiety responses to ongoing stressors (Koopman, Gore-Felton, Classen, Kim, & Spiegel, 2001).

CSA survivors also experience greater rates of non-trauma related anxiety disorders. In studies conducted in anxiety disorder clinics treating panic, agoraphobia, generalized anxiety disorder, and social anxiety, patients with anxiety disorders were significantly more likely to have histories of sexual abuse than controls without anxiety diagnoses (Mancini, van Ameringen, & MacMillan, 1995; Stein, Walker, & Anderson, 1996). When comparing anxiety patients with and without CSA histories, CSA survivors were found to experience significantly more phobic avoidance ($p<.016$), agoraphobic avoidance ($p<.014$), state anxiety ($p<.005$), and trait anxiety ($p<.002$) (Mancini, et al., 1995). Of anxiety patients with CSA histories, 60% met criteria for panic disorder (Stein, et al., 1996).

All of these anxiety disorders are characterized by a cluster of symptoms related to chronic hyperarousal and difficulty managing emotions (van der Kolk, Pelcovitz, & Roth, 1996). Arousal symptoms found commonly among CSA survivors include poor concentration, insomnia, restless sleep, exaggerated startle response, attention narrowing, panic attacks and chronic muscle tension (Briere & Runtz, 1987; Southwick, Yehuda, & Wang, 1998; van der Kolk, et al., 1996). Problems related to affect management include a poor ability to identify emotional cues, misinterpretation of surroundings as threatening, mood lability, lack of emotional flexibility, trouble controlling negative affect, and impulsivity

(Mancini, et al., 1995; Shipman, Zeman, Penza, & Champion, 2000; van der Kolk, et al., 1996).

These problems with hyperarousal and emotional dysregulation can logically be explained as the aftermath of the chronic fear and anticipation CSA survivors experienced as children in relation to the threat of sexual abuse (Pillay & Schoubben-Hesk, 2001). Because of the constant fear of abuse, the child may learn that chronic arousal and hypervigilance are the best modes for controlling her experience; this pattern may then lead to an adult who operates from a state of hypervigilance in order to cope.

While this explanation of chronic threat of attack is sufficient, research suggests that anxiety and affect dysregulation symptoms can be more fully understood by considering the dynamics of attachment surrounding the abuse. As discussed in the previous section, children learn how to identify and manage intense emotions by relying on an adult for soothing and containment. In a prototypical sexual abuse situation, characterized by secrecy and isolation, the child is not able to look to the abuser for such soothing and containment, nor can she go to another trusted caregiver for fear of violating the secrecy. Therefore, the child does not have an effective attachment relationship through which she can expect to find relief from her overwhelming fear and pain; in studies of sexually abused children, over 80% have disorganized or disoriented attachment patterns (van der Kolk, et al., 1996). Without this stable attachment, the child cannot learn from a caregiver about the nuances of her emotional experience, and instead relies on herself to interpret and respond to emotional and

environmental cues. This self-reliance for affective learning contributes to an inability to differentiate emotions and use them as signals for appropriate action (van der Kolk & Fisler, 1994). The result is the child's experience of a constant, amorphous, intolerable distress, which serves as a ubiquitous signal of danger (van der Kolk, 2003). Because arousal is so undifferentiated and is associated with danger, the child lives in constant fear of not only further abuse but of her own overwhelming negative affect. This dual fear then leads to chronic hypervigilance to avoid the danger of abuse *and* her intense emotions (Reckling & Buirski, 1996). As an adult, the CSA survivor may maintain these pervasive patterns by responding to undifferentiated arousal as a signal of catastrophic danger, leading to anxious, intense, automatic fight-flight or freeze responses.

This chronic fight-flight-freeze reaction influences the neurobiological stress response systems of the brain. As mentioned earlier, the trauma of abuse and anticipation of further trauma may lead to hypersensitivity of cortisol releasing factor (CRF) and catecholamine receptors. This sensitivity, also known as kindling, means that each subsequent stressor, regardless of magnitude, induces an increased response from the sympathetic nervous system and HPA axis (Southwick, Yehuda, & Wang, 1998). One study suggests that females may be especially susceptible to this limbic system kindling, because CRF receptors and CRF producing genes are particularly responsive to estrogen (Weiss, Longhurst, & Mazure, 1999). This hypersensitivity of CRF and chronic release of cortisol can damage the HPA axis and limbic system brain regions, creating an inability to mobilize an effective and appropriate hormone response to

subsequent stressors. As a result of this dysfunction, the CSA survivor can continuously misperceive threat when it does not exist and respond physiologically with panic related symptoms of fear and anxiety. Because her body perceives threat all around, the survivor becomes hypervigilant in order to defend against possible threat and the overwhelming emotions that threat brings.

This hypervigilance can interfere with the survivor's daily life and her ability to participate effectively in psychological treatment. The survivor can live in a constant state of anxiety, with experiences of depression, irritability, aggression, and impulsivity that seem uncontrollable and confusing. An inability to name and manage emotions and somatic reactions can have long lasting impact on the survivor's personality, including hatred of body, feelings of helplessness, and difficulties with trust and intimacy in interpersonal relationships (van der Kolk, et al., 1996). All of these problems can interfere with the survivor's experience of therapy, as she is unable to identify, label, evaluate or regulate the affective sensations of her body. Because these feelings are so uncontrollable and threatening, exploring the traumatic memories of the past is likely to be re-traumatizing unless the survivor has the skills to name and manage the intense experience of her emotions.

*Dissociation: Separation from the Body*

Dissociation refers to the compartmentalization of sensations, memories, emotions, consciousness, identity or perceptions which prevents a person from integrating the entirety of her experience (APA, 2000; Streeck-Fisher & van der Kolk, 2003). Research on dissociative disorders has established a strong

correlation between severe childhood trauma, especially sexual abuse, and dissociation. One study of psychiatric inpatients found that 100% of patients with significantly elevated scores on an assessment of dissociative symptoms had histories of childhood sexual abuse (Saxe, van der Kolk, & Berkowitz, 1993). A meta-analysis of studies involving patients with dissociative identity disorder (DID) found that 66-83% of inpatients with the disorders had been sexually abused as children (Beitchman, et al., 1992). The DSM-IV acknowledges the association between trauma and dissociation, asserting that dissociative disorders rarely occur in the absence of traumatic or severely stressful events (APA, 2000).

In addition to dissociative disorders, a diagnosis of PTSD involves the presence of dissociative symptoms (APA, 2000). This diagnosis is based on a bi-phasic stress response model, which proposes that trauma survivors cycle between anxious hyperarousal and dissociative numbing, which detaches the survivor from the overwhelming sensations of the traumatic memory (Horowitz, 1976). This detachment can take the form of alienation from sensations and perceptions in depersonalization and derealization, to forgetting in amnesia, to relegating traumatic experience to "someone else" in DID (Chu & Dill, 1990). A study of 226 CSA survivors found that a significant number of subjects suffered from chronic dissociation in their day-to-day lives, in the form of flashbacks, "spacing out," feelings that things were unreal, memory problems, and feelings of not always being in the body (Maynes & Feinauer, 1994). The severity of these dissociative symptoms was correlated with the severity of the sexual abuse. One

survivor described her experience of depersonalization, or feeling outside of her body, stating,

> If someone said, "What do you feel in your arm?" I would have had no idea what they were even talking about. If I touched it, I felt my arm with my hand, but I couldn't get inside of it. I could only touch the skin from the outside. I couldn't have felt my heart beating. I couldn't experience anything from my body because *I* wasn't inside my body (Bass & Davis, 1994, p. 217).

This depersonalization, along with all dissociative symptoms, essentially involves the psychological cutting-off from the body and its perceptions.

Today, dissociation is seen as a reasonable and common coping mechanism used by children and adults in the face of acute terror or pain. Dissociation from the present perceptual experience muffles the intensity of the physical and emotional arousal of the trauma (van der Kolk & Fisler, 1994). Children are particularly capable of dissociating. One study asking CSA survivors to describe their experience of the abuse identified various dissociative experiences, including losing track of what was going on, time changing, perceiving the situation as unreal, floating above or observing the abuse from the outside, sensing a change or distortion of the body, escaping the body, and amnesia of the sexual activity (Maynes & Feinauer, 1994). Each of these symptoms may have lessened the child's connection to the pain and discomfort of the abuse, and may have helped the cognitively immature child make sense of the confusing situation (Streeck-Fischer & van der Kolk, 2000).

While this dissociation is helpful in the face of trauma, children may inappropriately use it as a coping mechanism in non-traumatic contexts. In situations where abuse is ongoing, children may go numb and disconnect from their senses to remain prepared for imminent trauma (Reckling & Buirski, 1996). In addition, because sexually abused children often lack affect regulation skills, they may come to rely on dissociation to contain and manage their painful emotions and continue with daily living. Object relations theorists propose that this internalization and disavowal of the bad emotions related to the abuse helps maintain the abuser as a good object, and makes maintenance of the relationship with the abuser tolerable (Grand &Alpert, 1993). The child who dissociates her emotional turmoil is able to attend to the abuser's moods and needs cognitively without being distracted by her fear and pain (Streeck-Fischer & van der Kolk, 2000).

In attempting to manage their emotional experience, children may dissociate their pain and vulnerability by developing an intellectualized sense of self (Straker, Watson & Robinson, 2002). Because the body is the site of the abuse it is easily perceived as the part of the self that is most vulnerable and most dangerous. As mentioned earlier, sexual abuse impinges upon the body's ability to contain experience and the abused child may come to rely on the mind for containment. With this over-reliance on the mind and intellectualized self, the child may make sense of her experience through magical and regressive fantasies, in which the body is seen as inessential and peripheral (Attias & Goodwin, 1999). One survivor describes her experience of disavowing her body

and relying on her mind, explaining, "I tolerated the physical pain because I went up into my head. . . I would rock back and forth in my bed. I would sing to myself. I would think about being adopted . . . I thought it was always mind over matter" (Young, 1992, p. 97). This sense of separateness may persist as the child wishes to be rid of the body that is vulnerable to pain and inextricable connected with a dangerous physical world.

Findings from physiological research suggest that neurobiological alterations may also be involved in dissociation. As mentioned earlier, when presented with inescapable threat, a child may respond by freezing, which may stimulate the parasympathetic nervous system, reducing heart rate and respiration, and distorting perception of time and sequence of events (Rothschild, 2000). This physiological freeze response corresponds with trauma survivors' description of dissociation during abuse as they lost time, observed the abuse from the outside, and were amnestic for the traumatic details.

As mentioned previously, chronic hyperarousal of the HPA axis may lead to an eventual blunting of its responsiveness, resulting in lower mean levels of cortisol in response to stress and threat (van der Kolk, 2003; Resnick, et al., 1995). Lower cortisol is assumed to correspond with a failure to mobilize effective physical and emotional responses to defend against the threat; such a failure is often referred to as learned helplessness, in which the survivor remains numb and passive to threat. Interestingly, while abused boys are more likely to cycle between hyperarousal and dissociative numbing after the trauma, girls are

more likely to maintain a consistently dissociative and helpless orientation (Streeck-Fischer & van der Kolk, 2000).

Dissociation may also be related to disturbances is brain anatomy and functions, including the hippocampal atrophy and hyper-reactive amygdala discussed earlier. The hippocampus is believed to be the structure that helps integrate and create explicit narrative memory, while the amygdala is thought to create implicit memory for sensations and emotions (Bower & Sivers, 1998). Therefore, if the amygdala is activated in the face of trauma without a functioning hippocampus, sensory parts of the memory may be stored without a coherent cognitive narrative of the experience. Based on this hypothesis, memories of the abuse may be located in the body and somatic sense and not associated with the mind, allowing for the dissociation of these memories through disavowal of the body. In fact, one study of adult female CSA survivors with hippocampal reduction found that 72% of subjects had dissociative disorders (van der Kolk, 2003). These anatomical and hormonal alterations are consistent with survivor's qualitative experience of dissociation, described as relegating the traumatic memories to the body, disavowing the sensations of the body, and relying on the mind to function without disruption by overwhelming pain.

The use of dissociation effectively shields the survivor from feeling annihilated by the abuse, but if becomes a consistent style of responding to everyday stress it interferes with the survivor's ability to function. For example, without connection to the body's emotional cues, the survivor is unable to assess the danger of situations and may experience chronic retraumatization. On the

other hand, when dissociating from direct experience, the survivor is robbed of the pleasures of living in her body and the present moment. In addition, without access to painful emotions, the survivor may have a particularly difficult time processing her experience of trauma in therapy, and remain stuck in constant avoidance of her omnipresent pain.

*Somatization and Health Concerns: Distortions of the Body*

Since Freud first studied hysteria, there has been a clear correlation between physical health symptoms and childhood sexual trauma. While many of these problems can be the direct result of the sexual assault, such as broken bones or STDs, many are more difficult to assess and explain. When a person experiences numerous physical complaints with no identifiable medical correlates, their symptoms are often described as somatization. In one DMS-IV field trial exploring somatization disorder, 80% of subjects with the disorder report sexual abuse either as children or adults (Pribor, Yutzy, Dean & Wetzel, 1993). Multiple studies have corroborated this link, with CSA survivors being significantly more likely than other women to suffer from gastrointestinal, pain, respiratory, and sleep problems (e.g., Morrison, 1989 and Pribor & Dinwiddie, 1992). In fact, one study found that somatization disorder, along with dissociative disorder, was more predictive of a history of CSA than any other psychiatric disorder (Briere & Runtz,1988).

The most common physical symptoms associated with CSA are chronic pelvic pain, irritable bowel syndrome, fibromyalgia, asthma and breathing problems, migraines, and joint pain (Nelson, S., 2002). CSA survivors also suffer

from a greater number of physical symptoms, more diffuse pain, and their symptoms are often more chronic than women without such histories (Newman, Clayton, Zuellig, 2000). A recent national survey identified that 43% of all CSA survivors suffered from a chronic medical condition within the past 12 months (Ullman & Brecklin, 2003). These conditions are also associated with a greater number of physician visits, hospitalizations, and surgeries among CSA survivors (Newman, et al., 2000).

These medically unexplained symptoms have been interpreted as the expression of emotional pain through the language of physical symptoms. This explanation suggests that CSA survivors may have learned that it was unsafe to disclose their emotional distress, but were able to use physical symptoms to receive care and emotional support from family and doctors (Nelson, S., 2002). Through identification of physical maladies, the survivor may receive secondary gain of the care-giving that may be lacking in situations involving CSA. The focus on bodily symptoms may also serve to distract the survivor from the anxiety associated with the abuse, or may be the manifestation of perceptions of her body as damaged (Maynes & Feinauer, 1994).

Van der Kolk (1994/1996) connects somatization to the affect dysregulation resulting from poor attachments developed in CSA situations. Because the child is unable to regulate her emotional arousal, she cannot identify the emotions associated with her physiological cues and may instead interpret these cues as physical ailments. In developing ways of coping with her hyperarousal, she may complain of the physical symptom, thus distracting herself

from the anxiety by focusing on and trying to cure her body. Some trauma theorists propose that when a child is unable to identify and regulate her response to the sexual abuse, her memories of the trauma become stored as somatosensory memories (Rothschild, 2000). The combination of misinterpreting physiological hyperarousal with the possibility of somatic memories may account for the multiple health concerns reported by adult CSA survivors.

However, this explanation of somatic complaint as a defensive strategy overlooks the possibility that CSA may lead to actual physical problems. Even Freud recognized that sex between an adult and young child results in "injuries sustained by an organ which is as yet immature" (1962/1896, 202). For example, the penetration of a young child's mouth or vagina may create injuries that affect the sensations and function of that organ. One survivor describes the long-term damage to her throat and vocal cords by forced oral penetration:

> "Your throat is incredibly painful. . .My whole 'voice box' felt swollen. Your gagging reflex goes haywire. Afterwards, as a child, I used to scrub the inside of my mouth; I even tried to scrub the back of my throat . . .because it feels so gross and disgusting" (from Nelson, S., 2002 p. 57).

This example illustrates the actual physical trauma that the survivor's throat sustained during the abuse and afterward by attempts to cleanse herself. While her diagnosis of Paradoxical Vocal Cord Dysfunction is defined as a

psychosomatic disorder, further investigation suggests that the abuse may have contributed directly to her condition.

In addition to these direct effects of the abuse, survivors' physical complaints may also be the results of secondary effects of the abuse. The long term hyperarousal and release of cortisol may eventually weaken the survivor's immune system, thus leading to a vulnerability to a number of conditions. In addition, children in situations involving CSA may be less likely to receive adequate medical attention, and early injuries may go untreated, leading to chronic pain disorders (Stuart & Noyes, 1999). As adults, CSA survivors are also more likely to engage in health risk behaviors, including smoking and sexual promiscuity, making them more susceptible to resulting illnesses (Newman, et al., 2000).

Thus, CSA may contribute to both the physical and psychological components of survivors' somatic complaints. Unfortunately, a survivor with such complaints may be stigmatized by health professionals as a 'somatizer' which may support her original feeling of confusion and belief that she is undeserving of care. Survivors encountering such responses will then continue to suffer from their health concerns without validation of their suffering. Medical and mental health professionals should instead intervene by providing creative, comprehensive services that support the survivor in identifying and healing the injuries sustained by both her body and mind.

*Self Destructive Behaviors: Punishing the Body*

Survivors of childhood sexual abuse have been found to engage in multiple behaviors which involve damage to their bodies, including substance abuse, eating disorders, and self injury. While these behaviors are multi-determined, studies with clinical and community samples have found that CSA survivors engage in self-destructive behaviors at greater rates than the general population (Rodriguez-Srednicki, 2001; van der Kolk, 1996). The presence of multiple impulsive, self-destructive behaviors is a hallmark of Borderline Personality Disorder, which has been strongly linked with CSA and has been considered by some to be a complex PTSD reaction (Goodman & Yehuda, 2002; Herman, Perry & van der Kolk, 1989). Trauma theorists have proposed biological, psychological, and social explanations for the link between CSA and behaviors oriented specifically toward bodily destruction. The current study proposes that the behaviors arise because CSA survivors have neurobiological difficulties modulating affect, lack constructive self-regulatory skills, and are willing to damage their bodies, which they already perceive negatively, in order to cope with painful affect.

*Substance abuse.* Multiple studies have found that CSA survivors are over 2 times more likely to develop drug or alcohol dependence that the general population, with prevalence averaging 20 percent, versus the national average of 9 percent (see Simpson & Miller, 2002 for a review). Conversely, alcohol and drug abuse studies have found female substance abusers to be significantly more likely than males to have histories of CSA. One study of 181 female

intravenous drug users found that 60.2% had been sexually abused as children (Medrano, Zule, & Hatch, 1999).

A recent study found that the relationship between CSA and substance abuse was mediated by PTSD, with survivors who had more post-traumatic symptoms being more likely to abuse substances (Simpson, 2003). The survivors with PTSD were also more likely to use drugs or alcohol for tension reduction, increased pleasure, and sexual facilitation than CSA survivors without such symptoms. Another study of alcoholic women found that CSA survivors experienced more alexithymia than alcoholic women without such histories (Scher & Twaite, 1999). These findings support the proposition that substances serve to modulate affect, either by reducing negative emotions, increasing positive emotions, or suppressing emotions altogether.

*Eating disorders.* CSA has been linked to anorexia, bulimia and binge eating disorder, with the most significant findings related to impulsive bingeing (see Smolak & Murnen, 2002 for review). A national community based study of binge eating, with and without compensatory purging, found that 70.7% of women who impulsively binged at least three times per week were sexually or physically abused as children (Dohm, Striegel-Moore & Wilfley, 2002). Another study, using CSA as the independent variable, found that 5.4% of survivors met the full diagnostic criteria for bulimia and were three times more likely to have the diagnosis than controls. This study found that CSA'a attributional risk for bulimia was 34%, indicating that this percentage of the bulimic women would not have

developed the eating disorder without having been abused (Wunderlich & Wilsnack, 1996).

In addition to disordered eating behaviors, CSA survivors are more psychologically concerned with their weight, shape, and food (Leonard, Steiger & Kao, 2003; Wonderlich, Crosby & Mitchell, 2001). One survivor described her experience with anorexia, stating, "Someone came up to me the other day and said that I looked gaunt and it made me feel happy, safe. . . .If you don't have a body, you can't be hurt" (from Young, 2002). As this survivor explains, hatred and manipulation of the body can serve as a protective function to both modulate internal pain and prevent further abuse.

*Self injury.* Self-injurious behaviors include cutting, burning, skin picking, bone breaking, and head banging. Such behaviors have been seen in animals and humans who experience trauma or severe neglect. In a study of women who cut themselves (the most common form of self-injury), 79% had been abused as children, and CSA was the best predictor of cutting behavior (van der Kolk, Perry & Herman, 1991). In a study of CSA survivors, 43.8% cut, hit or otherwise injured themselves, versus 16.5% of controls ($p<.001$) (Wiederman, Sansone & Sansone, 1999).

As with substance abuse, the relationship between CSA and self-injury is mediated by PTSD, with CSA plus PTSD predicting 24% of variance in self-injurious behavior (Weaver, Chard, Mechanic & Etzel, 2004). Dissociative symptoms, often found in CSA related trauma, have also been found to be a significant predictor of cutting behavior ($p<.003$) (van der Kolk, Perry & Herman,

1991). The severity and chronicity of self-injury has been shown to be positively correlated with earlier traumatic experiences and emotional neglect (van der Kolk, et al., 1991).

Survivors engage in self-injury for various reasons. Biological theories of self-injury suggest that trauma responses can prompt self-injurious behavior as a means to create endogenous opioid mediated analgesia which suppresses psychological and physical pain (van der Kolk, 1996). This pattern of stress induced analgesia has been proposed as a coping mechanism which develops during abuse and is reactivated through self-injury. Psychological theories propose that self-injury serves as self-punishment, punishment of the other, or a cry for help. Survivors who do not identify their bodies as part of themselves may attack the body as the holder of the trauma and treat the body with the cruelty and disregard that their perpetrator did (Young, 1992). Together, these biological and psychological theories support the hypothesis that self-injury provides a biological regulation of affect by means of attacking the hated and damaged body.

*Chapter Summary*

Anxiety, dissociation, somatization and self-destructive behaviors can each been seen as a consequence of trauma in which a child experienced intense shock at the physical and emotional level and did not have the opportunity to develop skills for handling this shock. Because the trauma involved the body but was not integrated cognitively, the long-term effects of the trauma may be experienced at the physical level, making the body a very painful

and unpleasant part of the self. With the body experienced as insufferable and insufficient in coping resources, the traumatized child develops abnormal means of handling painful experiences which become default coping mechanisms in adulthood. Treatment of survivors who experience any of these symptoms needs to address the role that the body played in the trauma and currently plays in modulating affective experience.

## V. CSA Treatment Standards of Care

Research and theory on the treatment of trauma has been extensive and has resulted in standards of care endorsed by leading trauma theorists. The present chapter outlines these practice standards in relation to adult survivors of child sexual abuse, and identifies recommendations for body oriented work within this standard treatment model. Ultimately, these treatment guidelines and research findings will be used to inform the evaluation of yoga as an adjunctive treatment for adult survivors of CSA.

### *Stage Model of Recovery for CSA Trauma*

Judith Herman, in her seminal work *Trauma and Recovery*, proposed a three stage model of recovery from trauma informed by the basic concepts used throughout the history of trauma treatment. The three stages of treatment are, 1) establishing safety, 2) processing and integrating traumatic material, and 3) reconnection. This model has been used with survivors of various traumas with a range of responses including acute stress reactions, combat PTSD, and dissociative identity disorder (see Herman, 1992 for review). Currently, this model is regarded as the standard of care by prominent trauma theorists and used in various contexts with various populations (for example, Courtois, 1997; Harris, 1998; van der Kolk & Fisler, 1994).

This model provides a general framework for conceptualizing trauma therapy with CSA survivors, however clinicians should recognize that the stages are fluid, treatment may not move neatly through each stage, and treatment does not necessarily result in the resolution of all stages.

*Safety.* The initial stage of recovery and treatment focuses on establishing safety. The focus of the treatment is on building a trusting relationship between the client and therapist and creating a basic sense of safety and predictability for the survivor. For survivors of isolated, acute traumas, this phase may last only days or weeks, but for survivors of more long-lasting trauma, such as CSA, it may take years. Many treatments are entirely based on establishing safety and never progress to the subsequent stages.

Establishing safety initially involves addressing the threat and dangers that survivors fear within them selves. These dangers can include self-destructive behaviors, intrusive emotions and thoughts, and repeated involvement in abusive situations. Both Herman (1992) and van der Kolk (1996) assert that treatment should first focus on supporting the survivor's sense of control over her own body. Such control includes managing self-destructive behaviors, disabling hyperarousal and dissociation, attending to medical and health needs, and regulating bodily functions of eating, sleeping and exercising. Empowering the survivor to take control of her bodily integrity involves developing reliable self-care and self-soothing techniques which make her more secure in her ability to self-regulate and protect herself.

Herman (1992) recommends body oriented techniques to increase the survivor's sense of safety within her body, including non-addictive medication, strenuous exercise and relaxation exercises. Van der Kolk recommends that adult and child survivors begin to engage in pleasurable activities that do not trigger trauma responses and that provide a sense of physical pleasure and

mastery during the safety stage of treatment (Streeck-Fischer & van der Kolk, 2000). He recommends that the client and therapist choose activities where the survivor feels in charge, calm, and capable of accomplishing the tasks. Such activities are designed to provide an opportunity for the survivor to observe her somatic experience in a pleasant, relaxed state and develop a sense of physical mastery. The chosen activities should also promote coordination, tactile perception, recognizing sensations, and locating the body in space. This experience is used to counteract the survivor's tendency to cycle between hyperarousal and dissociation by helping her tolerate trauma-related sensations and emotions.

Once safety is established within the survivor herself, the work is to stabilize her environment. This task involves creating stability in housing, employment, finances, support system, and the therapeutic relationship. When safety is established, the survivor will no longer feel completely vulnerable and alone and be able to identify her support system. Establishing this sense of safety and predictability in the self and environment is a lofty goal and may be the biggest, if not the only, work of therapy. After learning to maintain a basic sense of security, the survivor can then move toward exploring her traumatic experiences.

*Remembrance and Integration.* The second stage of recovery involves the survivor telling her story of abuse. The readiness for this stage is agreed upon between the client and therapist, with the client in control of the timing and pacing of the processing (Lebowitz, Harvey & Herman, 1993). The work of this

stage involves a detailed reconstruction of the abuse, including a verbal narrative with imagery, bodily sensation and emotion, which should be expected to take months or years to create (Herman, 1992). In trauma involving multiple incidents, it is not necessary to process each event, but a few that best represent the typical details and dynamics of the abuse. With this narrative, the survivor can then explore and question the meaning that the abuse has had for her and what values and beliefs it has shaped. The goal of the remembrance is integration, which provides the survivor with a sense of control and realistic understanding of the memories of abuse, rather than catharsis which involves an unmodulated re-experiencing of the abuse with the misguided wish of purging and exorcising the abusive memories. Such catharsis is considered contraindicated because it creates retraumatization within the therapeutic relationship (Enns, Campbell & Courtois, 1998). The result of this stage of remembrance and integration is a story of the abuse as unwarranted and horrific in which the client feels like a dignified survivor rather than a guilty and humiliated victim.

Because remembrance involves confronting memories that may be dissociated from declarative memory, expressive techniques including body oriented work are indicated in this stage to gain access to information that will make the narrative complete. Van der Kolk (1994) recommends that post-trauma therapy address the surivivor's bodily experience to move from somatization of the trauma to symbolic representations of the experience through words. This progression involves being able to sense and name physical and emotional pain and make cognitive connections between the pain and triggering events or

memories. This naming of somatic experience should provide the survivor with self-awareness that can inform her ability to cope and self-regulate.

Christine Courtois (1988) recommends expressive and cathartic techniques to access the affective states experienced during the abuse that have been dissociated from current experience. Such techniques, including art, imagery, body work, and massage, are used to lower cognitive defenses and encourage the recollection of forbidden memories. Courtois acknowledges the cathartic potential of such techniques and stresses that they should only be used in combination with containing and self-soothing exercises within a therapeutic relationship where safety has been well established.

These recommendations are general and do not provide technical instruction, however Goodwin and Attias (1999) provide more concrete suggestions about activities that can be used to help access and integrate somatic sensations and memories. Among these suggestions are a number of body-oriented activities including exercise programs, massage, martial arts, yoga, and acupuncture that are recommended to access the "rather inarticulate world of the body and especially the word-shattering experience of body pain" (p. 173). The activities are recommended as adjunct to talk therapy and are intended to stimulate memories that could then be brought into therapy to be processed and integrated into narrative form. While all of these bodily oriented strategies are recommended for use during the rememberance and integration phase of CSA recovery, there is little research on the efficacy of specific techniques. Herman (1992) notes that work with the somatic and physiological

after-effects has been done with survivors of acute traumas, but that theory and research on body oriented work with survivors of chronic abuse is still exploratory.

When all of the available details of the traumatic memory are recovered through various channels, the survivor must mourn the losses associated with the abuse and process her rage. With time and repetitions, memory of the abuse no longer arouses intense fear and decompensation. Eventually, the memory becomes as emotionally charged as all others and no longer dominates the survivor as the most important and influential part of her history.

*Reconnection.* This final stage of recovery is the least discussed in trauma literature, ostensibly because it looks most like traditional psychotherapy. In this stage, the survivor moves from focusing on the past to building a future with a new perspective which is not dominated by avoiding and re-experiencing trauma.

A reconnection occurs within the survivor as she establishes new values and beliefs about herself. One task toward this goal is building a sense of agency and personal mastery by learning when to fight or flee from dangerous situations rather than freezing and remaining passive. By practicing assertiveness in potentially threatening situations, the survivor will begin to reconstruct her physiological reactions to stress and threat (Herman, 1992). In conjunction to learning assertive self-protection, the survivor works to develop a reality based sense of self, recognizing her strengths, weaknesses, desires, and ambitions.

Once the survivor has reconnected with her self, she works to reconnect with others. This includes redefining relationships with family, which may include disclosing the abuse and confronting the perpetrator. The survivor also starts to develop friendships and romantic relationships based on mutuality in which her boundaries, limits, rights and responsibilities are honored.

Body-oriented tasks in this phase include reprogramming the survivor's physiological stress response, improving body image, defining bodily boundaries, and experiencing physical pleasure. Some recommendations for body-oriented strategies are self-defense classes, exercise and athletic programs (Herman, 1992; Westerlund, 1992). One study of incest survivors found that women in this stage who exercised regularly reported that exercise was a means of feeling "in myself," "less vulnerable," "less fearful of violation," "physically whole," and "more powerful" (Westerlund, 1992, p. 54). Such testimonials suggest that physical activity provided the survivors with a new sense of bodily integrity and mastery.

Therapy is considered complete when the survivor can maintain relationships, bear memories and feelings associated with the abuse, and define her future. The survivor should expect that at times of stress and transition, she may re-experience some of the symptoms that she suffered before treatment, and should be encouraged to seek out therapy at these times.

As mentioned earlier, in reality these stages – Safety, Remembrance and Integration, and Reconnection- are not as distinct and sequential as they are defined here. Any survivor may at once struggle with regulating self-destructive behavior, processing a particular memory, and negotiating a new relationship.

These stages are provided as a framework to guide the overall pacing of treatment. In addition, this structural conceptualization informs the evaluation of potential interventions for their appropriateness and utility in the treatment of CSA survivors.

## VI. Somatic Trauma Therapies

Leading theorists like Bessell van der Kolk and Judith Herman emphasize the importance of body-oriented interventions in the treatment of sexual trauma. Such advocacy has initiated a growing interest in somatic treatments within mainstream psychology; however, for many years a number of clinicians *outside* of mainstream psychology have explored the importance of somatic interventions with trauma survivors. In their seminal self-help book, *The Courage to Heal*, Bass and Davis (1994) devote an entire chapter ("Your Body") to exercises focused on treating CSA survivors' body image, dissociation, and other body related issues. The theoretical underpinnings and strategies in these exercises are found in somatic psychotherapy which has been defined as alternative or complimentary, and which remains relatively inaccessible to many psychologists. In the current exploration of yoga as an intervention in the treatment of CSA trauma, it is important to acknowledge and incorporate the various models of somatic trauma therapy that have already been established.

Somatic psychotherapy models vary in important ways, including the quality and quantity of emphasis on the body, and whether the interventions occur within the therapy session or as adjuncts. This section reviews the in-session somatic psychotherapy models, which are divided into sub-categories of mindfulness training, bilateral stimulation, and dance/movement therapies. This review is followed by a brief description of the various adjunctive body-oriented interventions used in psychotherapy with trauma survivors.

*In-Session Somatic Interventions*

*Mindfulness Based Somatic Psychotherapies.* Mindfulness refers to the practice of attending to the internal and external elements of one's experience of the present. A handful of somatic psychologists have developed trauma therapy models which use mindfulness of the body and mind as the basis for working through trauma. This section is limited to somatic therapies which utilize mindfulness; techniques that are primarily cognitive and meditative, such as Jon Kabat-Zinn's Mindfulness Based Stress Reduction Program, will be reviewed within the section devoted to meditation.

Ron Kurtz (1990) was one of the first therapists to integrate mindfulness into the practice of somatic psychotherapy. He named his model of body-oriented psychotherapy The Hakomi method, using the Hopi Indian word for "who are you." This method of psychotherapy is meant to be applicable with all clients, including trauma survivors. The Hakomi method begins by teaching mindfulness of the body, guiding clients to track and name the sensory experiences associated with a particular thought, emotion, or behavior. The therapist models active attention to the present and encourages clients to stay mindful of their experience instead of reactive. This mindfulness leads to a greater tolerance of sensations, affects, and thoughts. With greater tolerance, the therapy then works to evoke particular experiences that the client wishes to process.

Somatic interventions are employed to evoke these targeted experiences. For example, if a client seems to tighten his jaw frequently, the therapist and client might experiment with relaxing the jaw, and see what sensations,

emotions, and thoughts are associated with the relaxation (Kurtz, 1990). Kurtz asserts that this tension in the jaw may be the somatic expression of a client's need to block a verbal expression, and attending to the relaxed jaw may evoke the verbalizations that are stifled. Ultimately, the Hakomi method of body-oriented psychotherapy aims to process experiences that the client has suppressed so that they can be integrated somatically, cognitively, affectively and historically.

Peter Levine's (1997) model, Somatic Experiencing, uses similar concepts of mindfulness and holistic integration of experience specifically in the treatment of trauma. His work is based on the concept that humans have the same innate self-regulatory mechanisms as animals, but that our natural ability to heal from traumatic experience is inhibited when our brains' higher functions try to process trauma logically. Using the physiological stress response model, Levine proposes that when a person freezes in the face of trauma, the energy needed for fight or flight is not discharged and remains in the body. He conceptualizes symptoms of trauma as the results of the body's attempt to contain and manage the unused energy.

In his book, *Waking the Tiger: Healing Trauma* (1997), Levine outlines his theory and presents somatic exercises aimed at releasing and re-integrating the energy from the traumatic experience. He explains how he uses these exercises in session, yet encourages survivors to implement them independently. The exercises begin with mindfulness techniques, in order to increase survivors' "felt sense," or awareness of bodily sensations and their meaning. For example,

Levine offers an initial exercise that involves standing in a shower and allowing water or varying temperature to fall on different body parts joined with affirming statements, such as "this is my arm, I welcome you back" (1997, p. 63). This experiment is aimed at re-establishing a connection to bodily sensations, skin boundaries, and ownership of the body. The felt sense is then used to provide the survivor with information with which to regulate feelings of safety and comfort.

With an increased connection to body sensations, Levine then proposes that the survivor track her felt sense while thinking about traumatic material. He offers multiple exercises for accessing traumatic memories, with the emphasis on using bodily sensations to pace the process so it does not become too overwhelming. The ultimate goal is to "renegotiate" the traumatic response by being consciously aware of the body's experience of traumatic memories (p. 117). The renegotiation occurs when the survivor is able recall the trauma without re-experiencing shock symptoms and when she can respond to subsequent arousal with adaptive physiological resources. Levine has recently published an audio CD specifically for survivors of sexual abuse, *Sexual Healing: Transforming the Sacred Wound* (2003), which leads survivors through his theory and provides exercises tailored to symptoms specific to sexual trauma, including sexual functioning and relational intimacy.

One of Levine's colleagues, and another principal figure in mindfulness based somatic psychotherapy, is Lisbeth Marcher, the founder of Bodynamic Somatic Developmental Psychology (Marcher, Ollars, & Bernhardt, 1990). Bodynamic therapy is based on Wilhelm Reich's character structure model,

which proposes that a person's physical composition is correlated with his or her character and psychological development. Marcher's system purports that specific muscles correspond with specific psychological functions. For example, the triceps are used to extend the arm, and Marcher correlates their development with the ability to assert one's boundaries, literally being able to push people away. Therapy in this model begins with a Bodynamic Analysis, in which over 200 muscles are assessed as hyper- or hypo-developed. The tonicity of each muscle is then identified in terms of developmental stages to understand the person's psychological resources, age level, and developmental needs. This analysis culminates in a presentation of findings to the client, who then decides what he or she wants to work on in therapy.

The therapy sessions are two hours long and involve exercises which contract or stretch particular muscles according to their developmental needs, followed by hands on contact with particular muscles to allow psychological material to emerge and be processed. For example, in a person with weak triceps, a session may involve push ups which develop the muscle, followed by the therapist touching the muscles and asking for associations related to saying no or asserting personal limits. A course of therapy is considered complete when the client has developed the physical and psychological resources that were neglected or avoided in development. Peter Bernhardt (1992) explores the application of Bodynamic theory and technique to trauma in his book, *Somatic Approaches to Shock: A Review of the Work of the Bodynamic Institute.*

A number of clinicians have used Kurtz, Levine and Marcher's ideas of somatic psychotherapy to create mindfulness approaches specific to trauma therapy. One of the most developed approaches is Pat Ogden's Sensorimotor Psychotherapy (2003). Ogden began as a massage therapist and social worker and studied Hakomi therapy with Ron Kurtz. In the 1980's she created a more body-oriented branch of Hakomi therapy, called Hakomi Integrative Somatics. In more recent years, Ogden has integrated Hakomi methods with neuroscience, attachment theory, cognitive theories, and Levine's and Marcher's somatic therapies into a trauma-specific treatment model which she calls Sensorimotor Psychotherapy. Her model has drawn the attention and praise from Bessel van der Kolk, who states "Pat Ogden is the undisputed master of teaching clinicians how to work with physical sensation to help people beyond their trauma. For me, her work has opened up a whole new dimension of effective therapy," (quoted on Sensorimotor Psychotherapy Institute Website, 2004). This endorsement has incited increased interest in and exposure to somatic therapies in psychiatric and psychological communities.

Sensorimotor Psychotherapy aims to increase trauma survivors' ability to self regulate and to integrate the body into a positive sense of self. Ogden's (2003) model is based on the stages of trauma therapy offered earlier in Chapter 4. This therapy focuses on fostering somatic resources appropriate for each stage of therapy. For example, safety is established by teaching a client to track her somatic experience and to use her own somatic resources to bring her

arousal to a tolerable level. The client is encouraged to observe her body calming itself down even when she stops trying to control it with thoughts.

The general technique of Sensorimotor Psychotherapy focuses on how the survivor's body processes and makes meaning of stimuli. Patterns of somatic response are identified and changed according to the survivor's particular needs. The goal is to increase somatic resources by increasing awareness and understanding of bodily sensation, bodily impulses, and habitual movements. By starting with the body and increasing somatic resources, Ogden believes that the survivor is then able to process the trauma emotionally and narratively in an integrated way.

Other models of somatic trauma therapy that emphasize mindfulness are presented in Marianne Eckberg's (2000) Victims of Cruelty, which provides multiple case examples, and Babette Rothschild's (2000) The Body Remembers which emphasizes the neuroscience of trauma and offers a workbook of exercises. The concepts and techniques in all of these mindfulness based somatic approaches are also characteristics of yoga. The ways in which mindfulness affects trauma survivors will be important in understanding yoga's potential efficacy as an intervention.

*Eye Movement Desensitization and Reprocessing (EMDR).* Francine Shapiro's system of EMDR treatment is based on the theory that the shock of trauma is stored and re-experienced in both the mind and body (2002). EMDR theorists believe that post traumatic stress disorder is the result of unprocessed memories which obscure perceptions and emotions (Parnell, 1999). The goal of

EMDR treatment is to induce reprocessing of information through the use of stimuli to activate brain regions additional to those triggered by the trauma. Shapiro (2002) proposes that the activation of additional brain resources allows the traumatic memories to be integrated so they are no longer experienced as traumatic. This treatment is included as a somatic intervention because it focuses on the relationship between the brain's processing of traumatic information and body's reaction.

Shapiro (2002) has developed a model of EMDR treatment based on the aforementioned stages of trauma treatment, which she calls Adaptive Information Processing (AIP). This process begins with an assessment to identify the target of EMDR treatment, which may include affect regulation problems, specific memories, or particular stressful situations. The next phase, stabilization, focuses on creating safety by increasing survivors self-soothing and coping skills, so they gain a sense of self-control and are able to manage the ensuing stimulation of traumatic material.

Once safety is established, the trauma is assessed. This involves the survivor identifying images, thoughts, and bodily sensations related to traumatic memories. This assessment is focused on the survivor becoming able to separate the different modes in which she reacts to the trauma, which is intended to help her feel less overwhelmed. When images, thoughts, and sensations are identified, they are rated for their intensity, using a scale called Subjective Units of Distress (SUD).

This assessment is followed by the intervention phase. Particular memories are paired with EMDR stimuli, which can be visual, auditory, or tactile. The survivor is asked to free associate and express all thoughts that occur during the stimulation, which is intended to promote new insight and understanding. After this process, the survivor is then asked to give a SUDs rating of the images, thoughts, and sensations related to the original memory. When the level of distress is significantly decreased, the survivor is asked to choose a positive cognition that counters the traumatic thought. The survivor then pairs the traumatic and counter thoughts and is exposed to the EMDR stimuli, which is believed to strengthen the belief in the positive cognition. After a cycle of intervention, the survivor is asked to assess her physical response to the memory that has been processed. The intervention is repeated until the survivor no longer feels disturbed cognitively or somatically when recalling the particular memory.

Multiple theories abound as to why such an intervention would change the survivor's automated response to recalled trauma (see Davidson & Parker, 2001 for a review). Skeptics assert that EMDR's effects are attributed to exposure and systematic desensitization, which has been supported by comparison studies of EMDR and other exposure therapies. Shapiro and her colleagues claim that EMDR involves more than desensitization, and actually restructures the brain's patterns of response (Parnell, 1999). A study using brain imaging provides some support for this claim. Van der Kolk, Burbridge & Suzuki (1997) performed SPECT scans on PTSD survivors while hearing scripts of their trauma before and

after a course of three EMDR sessions. Before treatment, brain activity was primarily in the amygdala. After treatment, there was significantly more activity in the anterior cingulate and right prefrontal cortex. The authors suggest that the reprocessing in EMDR helps stimulate higher brain function which can temper the intensity of the input from limbic structures by helping to appraise the threat. With this new involvement of more and bilateral areas of the brain, memories may move from being primarily affective and somatic to cognitive and explicit.

A few studies have investigated EMDR in the treatment of adult CSA survivors. Two studies found that three sessions of EMDR decreased PTSD symptoms, anxiety and overall distress, and increased survivors' sense of cognitive control (Datta & Wallace, 1996; Rothbaum, 1997). A recent experimentally designed study of female CSA survivors found that EMDR provided more relief of distress related to the trauma than traditional psychotherapy, and that the therapeutic benefits were maintained at a 18-month follow-up (Edmond, 2004).

As a cognitive and somatic intervention, EMDR has established itself as an empirically validated treatment. The recognition of this intervention as valid benefits the field of somatic psychotherapy by increasing the professional credibility of alternative treatments of trauma. In addition, the concepts of bilateral stimulation and reprocessing of trauma are relevant to the later exploration of yoga's benefits.

*Dance/Movement Therapy.* Possibly the longest standing somatic psychotherapy is dance/movement therapy. The American Dance Therapy

Association defines dance/movement therapy as "the psychotherapeutic use of movement as a process which furthers the emotional, cognitive, and physical integration of the individual" (retrieved from www.adta.org, 2004). Dance/movement therapy originated during the modern dance movement of the early 1900's in which natural, personally expressive, and spontaneous movement was emphasized over the more rigid forms of traditional dance technique (Levy, 1988). Innovators on both coasts of the United States began to apply the tenets of modern dance to mental health treatment. Today, dance/movement therapy is informed by two main branches of thought: that based on the work of Marian Chace with schizophrenics on the East Coast, and that of Mary Whitehouse with neurotic clients on the West Coast.

Marian Chace was a trained dancer who started facilitating dance/movement therapy with psychiatric inpatients in the 1940's (Levy, 1988; Sandel, Chaiklin, & Lohn, 1993). Her techniques were intended to provide severely disturbed patients who could not verbalize their inner experience a non-verbal means of communication. Chace believed that through this communication the patient may be able to make their inner experience more conscious and available for verbalization. The group process involved patients gathering and forming a circle. Chase would then assess the overall mood of the group, ranging from catatonically depressed to manically chaotic. She would then select and play music which matched the mood in order to reflect the patients' emotional experience. When a patient began to move spontaneously to the music, Chace would mimic his movement repetitively and encourage the rest of

the group to mimic the same movement. As she mirrored and exaggerated the patient's movement, she would ask for or provide verbal associations to the movement. Theoretically, through this process of tracking, matching, and verbalizing the patient comes to feel mirrored by the therapist and his peers which may help him become more conscious of the content of his non-verbal communication. Once this consciousness occurs, the mood of the group may begin to shift and Chace would then change the music to match the new mood, and the process would continue. Today Chace's principles are essential to dance/movement work with more disturbed clients as they provide a containing means for bridging the unconscious with more conscious and verbal modes of expression.

Mary Whitehouse's Authentic Movement came out of her experience with both modern dancer and Jungian analysis. Her work was primarily done with higher functioning individuals as a means of expression and gaining awareness and insight into the self, and has been further developed by Janet Adler and Joan Chodorow (Pallaro, 1999). The practice of Authentic Movement involves an individual engaged in spontaneous, inner directed movement in the presence of a witness. Theoretically, these spontaneous movements are directed by the unconscious and are made available for deeper self-awareness through their expression. The process of Authentic Movement begins in a studio as the mover closes her eyes, enters the designated space, and waits for a movement impulse to arise. The mover then follows this impulse into a physical gesture and continues to move as her impulses emerge. The witness observes the mover,

tracking and remembering as many objective details as possible. The witness also notices her own responses and associations as she observes the movement. After a designated amount of time, the witness calls time and waits for the mover to open her eyes. The mover then makes eye contact with the witness to reconnect. The mover then describes what she remembers of what she did. The witness then shares what she observed of the movement, commenting only on that which the mover remembered on her own. As the therapy progresses, this exchange might focus on instances of particular significant to the mover and the witness might share more of her reactions and associations. The emphasis is on the mirroring process, and therefore the witness does not provide interpretations of the mover's movement.

Each of these approaches, Chacian dance/movement therapy and Authentic Movement, has something to offer to CSA survivors through its emphasis on the body's wisdom and relevance to healing from trauma. Chacian therapy provides a more outer directed, containing experience which is appropriate for survivors with more severe trauma symptoms. Because Authentic Movement has a greater potential to be overwhelming, Wyman-McGinty (1998) offered specific considerations for conducting it with trauma survivors. She recognizes that survivors fear being surprised and overwhelmed by their inner experience, and that accessing the unconscious is extremely threatening. Therefore, she recommends that working with trauma should move more slowly and follow the stage model of trauma treatment. She believes that before engaging in movement, the therapist should spend time focusing on the

survivor's fears and building self-modulation skills, so the survivor can engage in Authentic Movement without re-traumatization.

Three studies investigate the effect of dance/movement therapy on CSA survivors. One case study of individual treatment with a sexually abused man focused on the integrating function of movement to bridge the survivor's mental and emotional experience of the past and present (Frank, 1997). In a study of adult female survivors who had engaged in various types of dance/movement therapy, subjects reported that the therapy helped them feel reconnected to their bodies, more aware, and more appreciative of their bodies (Mills & Daniluk, 2002). They also felt the dance/movement therapy gave them permission to play, feelings of spontaneity, and a sense of freedom. A study of adolescent girls in residential treatment who had been sexually abused found that dance/movement therapy did not significantly differ from talk therapy in diminishing symptoms of shame, dissociation, anxiety or sexual inhibition (Truppi, 2001).

Two studies explore the dance therapist's experience of working with CSA survivors. A case study of a 5 year old sexually abused girl emphasized the therapist's counter-transference feelings of traumatic bodily sensations related to the client's abuse (Ben-Asher, et al., 2002). In another study, a number of dance therapists were interviewed and identified main themes in their work with CSA survivors, which included trust and safety, self-esteem, shame, control, dissociation, and distorted body-image (Ambra, 1995). In this study, therapists reported that they paid more attention to establishing safety with survivors by allowing their eyes to stay open, giving them permission to refuse, structuring the

session, establishing control, focusing on "skin edges", and using grounding exercises. The therapists believed that through dance/movement therapy survivors gained the desire to experience their bodies, improved boundaries, and an increased ability to name their bodily experience.

The issues and outcomes to consider in dance/movement therapy with CSA survivors are likely similar to those in a yoga intervention. The guidelines provided for engaging in dance/movement therapy will inform this study's recommendations for integrating yoga into treatment.

*Adjunctive Interventions*

In addition to somatic treatment within the therapy session, many clinicians incorporate adjunctive interventions that involve the body. These interventions can be included through casual recommendations or by formal integration in a treatment plan. Three somatically oriented adjuncts pertinent to this review are massage, meditation and exercise.

*Massage Therapy.* Massage therapy involves the manual manipulation of soft tissue intended to alleviate physical pain or promote a general sense of well-being. While there is no known literature on the use of massage specifically as an adjunctive treatment, there is a body of research on the mental health effects of massage. In a recent review of the massage therapy literature, Moyer, Rounds, & Hannum (2004) present various psychological studies and identify the risks and benefits of massage therapy as a mental health intervention. In studies evaluating the effects of a single session, results indicate that massage decreases state anxiety, negative mood, and pain. With multiple sessions,

massage has the potential to also decrease trait anxiety and depression. Physiological explanations for these findings include the stimulation of the parasympathetic nervous system, reduction of cortisol, and increase in serotonin. Relationally, the interpersonal attention and contact involved in massage may also contribute to positive effects.

While these benefits may seem applicable to all clients, some concerns have been raised regarding massage therapy with trauma survivors. One article in a professional magazine for massage therapists recommends that the massage therapist learn to identify and respond to specific signs that indicate that the client is becoming overly aroused and triggered by the massage (Elliott, 1998). This article also stresses that massage therapists need to understand concepts of transference and countertransference when working with trauma survivors, and to know when they are working outside their scope of competency. Ultimately, however, the author suggests that massage may be beneficial because it can stimulate and soothe the body, allowing the client to find pleasure and connection to her somatic experience.

*Meditation.* Meditation is a class of activity that can be defined in a number of different ways. Yoga itself is a system of meditation, with hatha yoga being a physically active form. However, in psychological literature, meditation is most commonly conceptualized as an intentional focusing of attention for a sustained period of time. In such mindfulness based meditation, a person often sits comfortably in silence and focuses mental awareness on one of a variety of objects or processes including the breath, a mantra, a sound, or visual image.

The meditator is encouraged to remain in the present, notice his or her cognitive process, and continuously move awareness back to the desired focus.

Different styles of meditation vary in their attentional focus, posture and breathing. Perez de Albeniz & Holmes (2000) reviewed the literature on effects of various forms of meditation and found that normal subjects report increased self-acceptance, tolerance for affect, optimism, happiness, positive thinking, confidence, sense of mastery, and problem solving skills. Negative side effects included anxiety and panic, increased tension, pain, impaired reality testing, feelings of guilt, and even suicidality. Among psychiatric subjects, those with narcissistic and borderline personality disorders reported tension reduction, more tolerance for stress, and less depression, anger, and guilt. However, subjects with psychotic, dissociative and somatization disorders experienced an increase in distress and negative symptoms, and felt overwhelmed during meditation. Unfortunately, the majority of the studies reviewed were methodologically flawed and their findings difficult to generalize.

However, specific mindfulness-based programs which emphasize meditation have been developed and rigorously investigated. In 1979, Jon Kabat-Zinn implemented a meditation based outpatient stress reduction program within a large medical center. This program involved eight weeks of intensive meditation, hatha yoga, and application of mindfulness to stress, pain and illness (see Kabat-Zinn, 2003 for details). Since the success of this program, mindfulness meditation has been established as an effective adjunct to medical treatment for a number of conditions. Studies have demonstrated mindfulness

meditation's efficacy in the treatment of anxiety, chronic pain, and psoriasis (Kabat-Zinn, et al., 1985; Kabat-Zinn, et al., 1992; Relman, et al., 2001). In addition, studies suggest that these programs aid in recovery from prostate cancer, improve immune system function, and alter the brain's emotional processing (Davidson, et al., 2003; Saxe et al., 2001). Marsha Linehan (1993) has used mindfulness meditation within her Dialectical Behavior Therapy for clients with borderline personality disorder. The success of these programs, some of which include hatha yoga, suggests that the consistent practice of relaxation and meditation is beneficial to both physical and psychological health.

Unfortunaltely, no studies of meditation have focused specifically on CSA survivors. The general positive effects of mindfulness meditation with a variety of populations suggest that survivors might experience similar effects. The multi-faceted issues related to mindfulness mediation will be integrated later in the discussion of yoga, since the two practices tend to be practiced simultaneously.

*Physical Exercise.* General physical activity is perhaps the adjunctive treatment most closely related to hatha yoga. A large body of literature exists on the effect of exercise on mood and general mental health. Activities that have been studied as adjuncts to talk therapy include walking, jogging, swimming, and aerobics. Research indicates that regular aerobic activity can improve depression, anxiety, conversion disorders, pain disorders, and body dysmorphic disorder (see Tkachuk & Martin, 1999 for a review). A recent study found that non-aerobic activities, such as yoga also created mood enhancing benefits,

which will be explore more fully in the discussion of yoga as an intervention (Netz & Lidor, 2003).

Kate Hays (1999), a sports psychologist, dedicates a chapter to physical activity with trauma survivors in her book *Working it Out: Using Exercise in Psychotherapy*. She cites one unpublished study of subjects with CSA histories that found that exercise therapy was correlated with improved self care behaviors, increased positive feelings about physical activity, and relief from thoughts related to the trauma during exercise (Guerin, 1993). Hays (1991) conducted a study of a rock climbing excursion with female survivors of various traumas and found that survivors reported increased feelings of self trust and empowerment.

Elaine Westerlund (1992), a survivor and clinician, has developed I.R.*obics, Therapeutic Aerobics for Incest Survivors, in response to her perception of survivors' specific need for physical activity. She chose aerobics because of its ability to release endorphins in a sustained way to give survivors a lasting sense of well-being, versus their more familiar association of endorphins with fight or flight reactions. She designed the program to address survivors' particular issues. As a structured class, I.R.*obics provides a sense of safety and containment to participants, who are all survivors. Before and after the class, there is a brief discussion to establish safety, connect to one another, and process any difficulties. The class incorporates pulse-taking to give participants direct feedback from their bodies and learn to self-regulate their physical state. The program uses music that has relevant themes to survival and recovery.

Special attention is given to movements that address bodily shame, postural problems, expression of anger, and self-defense. While no formal research has been done on the program, multiple survivor organizations have adopted I.R.*obics, and Westerlund has published an audio-tape of appropriate music.

Hays (1999) explains that exercises like those in Westerlund's program are beneficial to CSA survivors because they help regulate physiological arousal, provide a constructive distraction from symptoms, and promote a connection with the body. Using principles of sports psychology, Hays details techniques which may be appropriate in designing an exercise intervention for CSA survivors. Such techniques include regulation of breathing and exertion, attentional focus, distraction, visualization and mental rehearsal, affirmations, and goal setting.

In addition to these techniques, Berger (1994) states that exercises used in the treatment of trauma related symptoms should be pleasant, enjoyable, absent of interpersonal competition, predictable, moderately intense, and require rhythmic abdominal breathing. While these qualities are relevant to the design of any exercise plan for trauma survivors, they are integral to the analysis of yoga and will be addressed more thoroughly in later chapters within the discussion of yoga for the treatment of CSA survivors.

*Summary*

This review provides a context of somatic treatments into which yoga may fit. The theoretical bases and practical considerations generated by researchers and clinicians provide a framework with which to evaluate the appropriateness of yoga as an intervention. In addition, these clinician's experience with CSA

survivors highlights the special issues to consider when incorporating yoga into a survivor's treatment plan.

## VII. Hatha Yoga: Introduction & Review of Physiological Effects

Yoga is a non-religious system of philosophy which originated in India nearly 6000 years ago. Yogic ideas were originally transmitted through oral traditions and the first written references to yoga appear in the *Upanishads*, the fundamental texts of Hinduism. The *Bhagavad Gita*, written around 500-600 B.C., is considered the first yogic text, and espouses yoga's philosophy through story. In 200 B.C., Patanjali wrote the *Yoga Sutras*, which is considered the official text of classical yoga and which has informed the development of yoga since.

The *Yoga Sutras* outline the goals of yoga and provides instructions for obtaining these goals. The essential goal of yoga is defined as, "the cessation of the fluctuations of the mind," which will lead to an individual's establishment of his or her "own and essential fundamental nature" (Sutras I.2-3 in Taimni, 1961). The establishment of one's essential nature is possible when one is able to experience *Samadhi*, or ecstasy. Patanjali outlines the practical aspects of striving toward Samadhi, which are broken into seven stages. The resulting 8 steps, including Samadhi, comprise the model of yoga from which most popular yoga systems are derived. The eight stage model is referred to as either *Raja* (classic) yoga or *Ashtanga* (eight-limbed) yoga, and is detailed in Table 2.

Multiple systems of yoga have been developed which incorporate these eight practical steps of yoga, but which place different emphasis on each limb. For example, *Jhana* yoga focuses on study, contemplation and meditation, while *Karma* yoga involves service to others, discipline and restraint, and *Hatha* yoga emphasizes posture and breath control.

Table 2

*The Eight Limbs of Yoga as defined by Patanjali*

| Limb Name | Definition |
|---|---|
| 1. *Yamas* (Discipline) | Non-harming, thruthfullness, non-stealing, chastity, greedlessness |
| 2. *Niyamas* (Restraint) | Purity, contentment, austerity, study, devotion |
| 3. *Asana* (Physical Posture) | Practice of steady and comfortable bodily postures |
| 4. *Pranayama* (Breath Control) | Practice of regulating breath |
| 5. *Pratyahara* (Sense Withdrawal) | Inhibiting the reaction of the senses |
| 6. *Dharana* (Concentration) | Holding one's attention on an internalized object |
| 7. *Dhyana* (Meditation) | Emptying of the mind while remaining alert |
| 8. *Samahdi* (Ecstacy) | Transcendece of ego-consciousness |

Western interest in yoga developed about 150 years ago. Emerson and Thoreau were inspired by the *Bhagavad Gita*, and the philosophy became popular amongst a growing sub-culture. In the late 1800's the first society for the study of yoga was established in New York. In the early 1900's the health benefits of hatha yoga were presented to the American medical community and a

relationship between yoga and alternative health interventions began. In the late 1940's a prominent Indian yogi opened a hatha yoga studio in Hollywood, California and gained the favor of celebrities, which helped bring public attention to yoga. In the 1960's and 1970's, many people became interested in yogic meditation and hatha yoga practice. In the late 1990's, yoga regained popularity, and today hatha yoga is practically synonymous with yoga. The growing popularity of hatha yoga and brought light the various forms of hatha yoga practice. The most popular styles are listed and described in Table 3.

Table 3

*Popular Styles of Hatha Yoga*

| Style | Description |
|---|---|
| *Ananda* | Focus on meditation, affirmations, energy awareness |
| *Anusara* | Celebration of the heart, alignment, balanced energy |
| *Ashtanga Vinyasa* | Focus on continual flow synchronized with breath, strength, stamina |
| *Bikram* | Heated practice of 26 postures to cleanse the body from the inside out |
| *Integral* | Popular for treating health problems, equal focus on posture, breath, and meditation |
| *Iyengar* | Emphasize understanding function of body, symmetry and alignment |
| *Kripalu* | Focus on "honoring the body", focus on reactions to postures |
| *Kundalini* | Release of body's energy often depicted as a snake, mixes chanting with postures |
| *Sivananda* | Holistic practice of posture, diet, meditation, chanting, deep relaxation |
| *Viniyoga* | Uniquely gentle postures, coordinates breath and movement into postures |
| *Yin/ Restorative Yoga* | Postures held for 5 minutes or more to release tension |

Regardless of the style, certain guidelines apply to the practice of hatha yoga. First, Patanjali dictates that any posture should be steady and comfortable. Once in the posture, the practitioner should observe the physical and psychological sensations experienced, regulate the breath, and then move into a meditative state (Yoga Sutras II. 46-49). With continued regular practice, the practitioner's primary focus moves from the body, to the mind and emotions, and ultimately to the spiritual.

According to the ancient texts, there are 8,400,000 possible asanas, 84 of which are considered essential (Svatmarama, 1997). The regular practice of asana was originally intended to create optimal physical health and functioning, which would condition the practitioner to be capable of the more subtle stages of yoga, such as breath and mental concentration. Each posture is intended to massage and strengthen the entire body, thereby improving the functioning of the muscular, endocrine, nervous, reproductive, respiratory and digestive systems (Arpita, 1991). Texts such the *Hatha Yoga Pradipika* (2002) and *Anatomy of Hatha Yoga* (2001) provide specific instruction for performing each posture and outline the physiological benefits of each.

The purported benefits of hatha yoga practice have long been based on anecdotal reports from yogis whose lifestyles are devoted to yogic practice. The first scientific studies of yoga by health professional began in the early 1900s within India, and these studies focused solely on full-time yogis. In the 1960s, with the rise of yoga's popularity among the American public, researchers in India and the United States began to focus on the physical effects of regular yoga

practice with normal subjects. Studies on the psychological and emotional effects of yoga have become more prevalent only in the last 20 years. Today, the term Yoga Therapy is used to refer to a yoga practice implemented specifically for the treatment of physiological or psychological conditions.

This remainder of this chapter is dedicated to reviewing the literature on the physiological effects of yoga and the following chapter reviews the literature on yoga's psychological benefits. The reviews are based on international literature published since the 1970s. The literature search was conducted using MedLine, PsychInfo, PsychArticles, and AltHealthWatch databases. In addition, articles published in the leading professional yoga journals, *Yoga Journal* and *International Journal of Yoga Therapy*, are included.

*Physiological Effects of Hatha Yoga*

The National Center for Complementary and Alternative Medicine (NCCAM), a division of the National Institute of Health, includes yoga as an effective intervention for preventative medicine and treatment of health problems. The agency conducts clinical trials of yoga for the treatment of conditions such as asthma, insomnia, and heart disease. In their literature, NCCAM proclaims that yoga is an effective health intervention because it creates greater self-regulation of various physiological functions, the majority relating to stress reduction through the down regulation of the sympathetic nervous system (Harrelson & Swann, 2003). Findings from a growing body of scientific research suggest that yoga improves the functioning of the musculoskeletal, cardiovascular,

respiratory, and hormonal systems. In addition, yoga has been helpful in the treatment of major illnesses and chronic pain conditions.

*Musculoskeletal Benefits.* Perhaps the most obvious benefit of hatha yoga practice is increased musculoskeletal functioning. Studies in India and the United States, with samples of different ages and fitness levels have found that regular yoga practice produces significant increases in muscular strength, muscular endurance and flexibility in a short period of (e.g., Gharote, Ganguly, & Moorthy, 1976; Tran, Holly, Lashbrook, & Amsterdam, 2001).

Yoga has also been shown to aid in the treatment of musculoskeletal disorders. In controlled study of patients with osteoarthritis in the hand and wrist, the yoga treatment group improved significantly more than the control group in finger range of motion, joint tenderness, and pain during activity (Garfinkel, Schumacher, Husain, Levy, & Reshetar, 1994). A similar study was conducted with patients suffering from carpal tunnel syndrome, and found that subjects who did yoga experienced improved grip strength, increased flexibility, and reduced pain when compared to controls (Garfinkel, Singhal, Katz, Allan, Reshetar & Schumacher, 1998).

Yoga has also been indicated in the treatment of hyperkyphosis, an abnormal convex curve of the upper back. In a non-randomized study of subjects with hyperkyphosis, the women were significantly taller, less convex in the thoracic spine, more flexible in a forward bend, and able to rise from a seated position more rapidly after 12 weeks of practice (Greendale, McDivit, Carpenter, Seeger & Huang, 2002). In addition to the musculoskeletal improvements gained,

participants in the study identified benefits of increased bodily awareness, relaxation, and time devoted to their own self-care.

These findings suggest that yoga helps in general fitness parameters of strength and flexibility, but also helps with skeletal alignment which can prevent and relieve joint related problems.

*Cardio-Respiratory Effects.* Numerous studies have shown that hatha yoga practice can improve cardiovascular and respiratory functioning in healthy adults, as well as manage symptoms of diseases of the heart and lungs (see Raub, 2002, and Arpita, 1991 for review).

The combination of active yoga postures with relaxation and breathing has been found to produce more cardio-respiratory benefits that relaxation alone (Raub, 2002). Regular practice of hatha yoga leads to increased overall cardio-respiratory endurance and efficiency, as measured by heart rate, blood pressure, oxygen consumption, and lung capacity. These changes enable a practitioner to experience less pain or fatigue when engaged in vigorous physical activity. Outside of physical activity, practitioners have been shown to sustain the decreases in heart rate and increases in oxygen consumption, which suggest decreased sympathetic nervous system activity and increased physiological relaxation (Vempati & Telles, 2002).

In addition to cardio-respiratory improvements with healthy subjects, yoga has been shown to help manage the symptoms heart disease (Raub, 2002). In studies of patients with chronic hypertension, regular practice of appropriate yoga asanas, with breathing exercises and relaxation, has been shown to decrease

both systolic and diastolic blood pressure. In subjects with cardiovascular disease, hatha yoga practiced in conjunction with a vegetarian diet and relaxation has been correlated with decreased total cholesterol, LDL cholesterol, and triglycerides.

Yoga has also been shown to effectively decreased symptoms of chronic bronchitis and asthma (Raub, 2002). Studies show that regular practice is associated with decreased expiratory rate, medication use, and perceived shortness of breath. In studies where physiological indicators of respiratory symptoms did not change, subjects still perceived improvements in respiration with yoga. The improvements found in subjects with respiratory problems are attributed to increased strength in the chest muscles, relaxation, and mucus drainage (Benagh, 2000).

*Hormonal Changes.* Multiple studies have shown that yoga is associated with immediate and long-term changes in the levels of important hormones. The majority of these studies focus on changes in cortisol levels, the hormone related to physiological stress. Two studies found that cortisol levels decreased immediately after a one-time hatha yoga class (Watanabe, Fukada, & Hara., 2002; West, Otte, Geher, Johnson, & Morh, 2004). Another study measuring cortisol levels before and after three months of yoga, found that levels increased significantly at the time of measurement (Schmidt, Wijga, & Von Zur Muhlen, 1997). A well-controlled study of yoga in conjunction with mindfulness based meditation found no significant change in mean cortisol levels (Carlson, Speca, Patel, et al., 2002). However, when the sample was split into high and low initial

within a mindfulness meditation program was correlated with increased quality of life, improved sleep, and decreased perceived stress (Carlson, et al., 2002).

Anecdotal evidence gathered from a yoga program for people living with AIDS suggests that yoga helps prevent disease progression by supporting the immune system (Stukin, 2001). The program focuses on inverted poses that are believed to stimulate the endocrine system. Even though the physiological benefits are not empirically validated, participants claim that practicing yoga helps them cope with the medication side effects and makes them feel in charge of their health and bodies.

*Chronic Health Conditions.* Yoga is also used in the management of chronic health conditions, such as chronic pain, fibromyalgia, chronic fatigue syndrome, and irritable bowel syndrome.

Yoga is part of Jon Kabat-Zinn's mindfulness based stress reduction program, which is widely used in the treatment of chronic pain. Studies which isolate the influence of hatha yoga on chronic lower back pain have found that regular practice can decrease pain by up to half, decrease likelihood of back injury, improve balance and flexibility, and decrease disability associated with the pain (Galantino, Bzdewka, & Eissler-Russo, 2004; Vad, as cited in Parker-Pope, 2002).

A case study of a woman with fibromyalgia, a systemic pain condition, found that with regular yoga, the subject was able to differentiate pain signals and feel more in control of her illness (McCall, 2004). An unpublished study of complementary and alternative practices with subjects with chronic fatigue

syndrome found that regular yoga practice was associated with decreased postural hypotension and perceived strain, and was the most effective of all studied treatments (Kelly, 2001). In patients with irritable bowel syndrome-diarrhea type, yoga practice was more effective than medication in reducing gastric activity (Taneja, Deepak, & Poojary, 2004). Yoga has been integrated into the standard treatment of IBS at the Mayo Clinic (Nelson, K., 2002).

*Chapter Summary*

While well-designed studies of the physiological benefits of yoga are limited, the research available indicates general areas in which yoga improve health. The regular practice of vigorous yoga postures promotes musculoskeletal and cardiovascular health in ways similar to other physical activity. However, the focus on breath and relaxation unique to yoga contributes additional stress reduction benefits, such as decreased sympathetic nervous system activity and changes in stress hormone levels. These physiological stress-reducing benefits may then decrease the severity of many symptoms associated with disease and illness. The ability of the yoga practitioner to facilitate her own stress-reduction can lead to an improved confidence in her coping abilities and promote overall sense of well-being.

## VIII. Psychological Effects of Hatha Yoga

The literature on the emotional and psychological effects of hatha yoga is limited, and adequately designed studies have only begun to surface in recent years. However, yoga is often purported to be a panacea for inner turmoil, and casual inquiry reveals that it is being used as a mental health intervention in a variety of settings (e.g., Napa State Hospital, Stanford Partial Hospitalization). In a national survey of mental health consumers with serious mental illness, 20 percent indicated that hatha yoga was a part of their treatment (Russinova, Wewiorski & Cash, 2002). The rationale for including yoga in the treatment of psychological problems appears to be based more on theory and anecdotal evidence than empirical data. As yoga's popularity as a psychological intervention grows, and systems of clinical yoga therapy develop, the critical analysis of its benefits and potential hazards is essential to ensuring ethical practice. The existing yoga literature provides preliminary support for yoga's efficacy in promoting relaxation, well being, and a sense of mastery. Additional empirical and anecdotal findings suggest that yoga may help alleviate anxiety, mood disorders, and behavioral problems.

Both popular and psychological literature indicates that regular practice of yoga improves a practitioner's overall sense of well-being. The aforementioned national survey of mental health consumers found that subjects engaged in regular yoga claimed that it improved their overall physical and emotional health (Russinova, et al., 2002). In a study of dementia care-givers, 70% of subjects reported feeling "somewhat" or "much" better in terms of energy, activity, sleep,

frustration, and overall well-being after 6 weeks of regular yoga practice (Waelde, Thomspon, & Gallagher-Thompson, 2004). Some researchers have suggested that the improvements in well-being are attributed to physical activity in general and not yoga in particular (Shestopal, 1999). However, studies with non-clinical samples comparing yoga to regular aerobic activity found that subjects practicing yoga experienced greater improvement in subjective well-being scores. These subjects claimed significantly greater improvements in perceived quality of health, mental condition, sleep, and interpersonal relationships than controls or subjects engaged in swimming or cross training activities ($p<.01$ - $<.0002$) (Berger & Owen, 1992; Harinath, et al., 2004; Netz & Lidor, 2003;). Exercise psychologists suggest that the differential effect of yoga and aerobic activity is attributed to yoga's added emphasis on breath, relaxation, and predictability in routine (Berger, 1994).

In addition to relaxation, yoga emphasizes self-regulation which may promote a sense of mastery. In a study of children, subjects were selected based on lowest scores on physical coordination and body satisfaction measures (Clance, Mitchell & Engelman, 1980). The children engaged in four weeks of yoga as their daily physical education activity and were compared to controls who continued traditional activities. All subjects in the yoga group showed significant increases in body satisfaction, while the control group showed no change ($p<.01$). In a study of women engaged in a variety of physical activities, those who practiced yoga showed the greatest degree of body awareness and body satisfaction (Daubenimer, 2003).

In addition to improvements in physical mastery, yoga participants have been shown to report greater sense of overall self-efficacy. In a study comparing yoga to group therapy and control conditions, yoga was associated with the greatest increase in self cathexis scores ($p<.01$) (Engelman, Clance & Imes, 1982). Daubenimer's (2003) study found that yoga practitioners experienced greater overall self-acceptance, self trust, and subjectivity. This self-mastery has been shown to include cognitive processes. The study of dementia care-givers found that after yoga training, subjects felt significantly more in control of the upsetting thoughts related to their work (es=.66) (Waelde, et. al, 2004). A popular review of yoga for the treatment of attention deficit hyperactivity disorder claims that the structure, self-awareness, and coordination inherent in yoga practice helps alleviate symptoms of the disorder in children and adults (Ruiz, 2001).

The well-being and self-efficacy promoted by yoga have made it a popular intervention for stress and anxiety conditions. Perhaps the most scientifically supported use of yoga as a psychological intervention is within Jon Kabat-Zinn's Mindfulness Based Stress Reduction program, which has been effective in the treatment of a variety of stress related disorders (see Kabat-Zinn, 2003 for a review). In this program, a set sequence of yoga postures are incorporated into group and individual practices along with seated meditation and discussion. Recent studies on the use of hatha yoga alone have found consistently that clinical and non-clinical subjects score significantly lower than controls on State-Trait Anxiety Index after a period of regular practice (Arpita, 1991; Harinath, et al., 2004; Waelde, Thompson & Gallagher-Thomspon, 2004; West, Otte, Geher,

Johnson & Mohr, 2004). Such decreases in anxiety have also been found immediately after one session of yoga practice (Netz & Lidor, 2003).

Studies with non-clinical samples have found that yoga also improves mood and decreases symptoms of depression. Measurements taken immediately after yoga practice have indicated that yoga decreases tension, fatigue, anger, guilt, and hostility (Arpita, 1991; Berger & Owen, 1992). A pre- and post-test study of dementia caregivers found that after six weeks of daily yoga practice, subjects' Center for Epidemiological Studies-Depression Scale scores decreased dramatically, with an effect size of 1.02 (Waedle, et al., 2004). In studies comparing yoga to other exercise conditions, yoga led to decreases in depressive symptoms when compared to controls, but the changes were comparable to those found in the other physical activity conditions (Berger & Owen, 1992; Netz & Lidor, 2004; West, et al., 2004). One unpublished study of a small group of veterans with clinical depression found that after practicing one hour of yoga per week for six weeks, all subjects no longer met criteria for major depressive disorder (Carter, as cited in Willis, 2003). Some yoga instructors have developed specific practices for the treatment of depression, which emphasize monitoring feeling states and inversions to increase oxygen flow to the brain (Fowler, 2002; Weintraub, 2004).

Yoga is also used in the treatment of substance abuse and addictions, although there are no published studies of such an intervention. One publication, *Healing Addiction with Yoga: A Yoga Program for People in 12-Step Recovery*, offers one woman's story of recovery and provides a treatment model for

incorporating yoga into a 12-step program (Cunningham, 2003). The rationale provided for using yoga in recovery is that taking care of the physical body is essential to wellness and that yoga's emphasis on surrender parallels the 12-step tradition. The program provides a 4-week schedule of individual practice with 12-step affirmations connected with each pose, and includes instructions to use a journal to reflect on the connection between yoga practice and recovery.

Wagner (1997) proposed a similar yoga intervention to be used in residential treatment for alcoholism. In his dissertation, he claims that yoga has potential benefits to preventing relapse because it integrates physical and psychological needs, as well as providing a coping tool. The model presented offers a 12 week learning series with a special focus on liver stimulation, relaxation, and oxygenation.

In addition to substance abuse treatment, some programs for criminal offenders incorporate yoga practice. The most thorough and relevant study investigated the use of yoga in the treatment of adolescent sexual offenders (Derzotes, 2000). This qualitative study followed nine boys through nine months of weekly yoga practice, interviewing the boys, their parents, and their social workers. Thematic analysis showed that yoga helped the boys with anger, urges to offend, concentration, reactivity, and emotional lability. All participants reported that they initiated their own self-practice to help with stress and coping. In reference to the effect of the yoga intervention, one boy claimed, "for the first time in my life there is a place where I feel safe and happy" (p. 97). While the study did not correlate yoga practice with a decreased risk to re-offend, the

intervention offered emotional and psychological benefits that may be decrease risk.

With similar intentions, a large non-profit organization, *Yoga on the Inside*, has been established to provide yoga to youth in juvenile corrections facilities. The emphasis of this program is on altering the group identity common to gang members through the individual and somatic focus of yoga. The founder, David Lafaille, states that "yoga relates to their bodies, their own selves, and gives them something to look back on as a constant source of renewal (Wyer, 2004).

With yoga being applied in so many setting to treat such a variety of symptoms, its applicability to trauma survivors in general and sexual abuse survivors in particular is a topic of debate among yogis. No studies have yet been published that investigate yoga's influence on post-traumatic symptoms, but a dialogue exists. One yoga master who runs an internationally known center reports that in his estimation, 50% of practitioners who visit his center have experienced some form of sexual abuse (Kimbrough, 2003). He believes that yoga can help survivors by enhancing self-soothing functions, so that they are better able to examine their abuse histories productively. In addition, he claims that yoga can help by stimulating enjoyment of the body and exploring the shame that may come with this stimulation. Lastly, by building a strong yoga practice, a survivor can cultivate aspects of herself that might have been overshadowed by the trauma related symptoms.

One survivor published her story of using yoga to help heal from her history of CSA (Smith, 2003). She claimed that the union and balance

emphasized in yoga helped her with splitting and dissociative symptoms. She highlighted yoga's integrating effects, with the balance of right and left, front and back. She implores other survivors to, "take your place on the mat, choose to grow and heal, making your practice your own."

While such testaments are encouraging, the therapeutic use of yoga with severe trauma symptoms is not without its risks. The somatic stimulation of yoga, or any other physical activity, can be overwhelming and disorganizing for clients with psychosis, somatization, or dissociative disorders (Nespor, 1985). The cathartic release of emotion possible in yoga, as with any cathartic release, can have a re-traumatizing effect and must be managed to ensure safety. Proponents of yoga for healing trauma emphasize that it is important for the teacher to create a holding environment and to avoid trying to cause an emotional release (Lee, 1999; Raskin, 2004; Weintraub, 2004). When working with sexual abuse, Weintraub recommends that yoga practice be undertaken as an adjunct to psychotherapy.

The limited literature on yoga as a mental health intervention highlights the need for its systematic study. The potential benefits of relaxation, self-awareness, and symptom relief are promising, but further research is necessary to support these findings. Given the use of yoga a variety of treatment settings, it is critical that practitioners develop an informed rationale for the intervention and consider the potential risks involved for each individual client.

## IX. Yoga as an Adjunctive Treatment for CSA Trauma

The literature on CSA has provided ample evidence of the various and severe biological, psychological, and social problems that survivors may experience. These symptoms are the result of overwhelming trauma that the child attempts to understand and manage with her immature cognitive, emotional, and somatic resources. Although often overlooked in psychological literature, the body is integrally involved in the perpetration of the abuse, the coping mechanisms used, and the resulting problems. Because of the body's role in the trauma and symptoms, it should be incorporated into the therapeutic process so that it may be more integrated into the survivor's experience.

The adjunctive use of yoga, guided by an instructor in a class, private setting, or through a taped medium, is a viable method for achieving this integration. A survivor's involvement in regular yoga practice can enhance a more traditional talk therapy by giving her the opportunity to explore her body while in a containing therapeutic relationship. This chapter delineates the bio-psycho-social rationale for incorporating yoga into a treatment plan. In addition, it provides guidelines for assessment, treatment planning, and intervention. Precautions and potential pitfalls to be aware of are also discussed.

### *Rationale*

Although it is evident that yoga is currently being used informally in the treatment of trauma in various settings, a fully developed rationale is absent in the literature. Such a rationale is essential to ensure ethical treatment which defines intended outcomes and potential consequences. In terms of treating CSA

related trauma, yoga may be helpful in improving self soothing abilities, somatic awareness, body image, and interpersonal bodily boundaries.

Deficits in self soothing and affect modulation skills are common amongst survivors of CSA trauma. These difficulties can lead to anxiety disorders, hypervigilance, emotional lability, increased startle response, and impulsivity (van der Kolk, et al., 1996). The childhood history of trauma can create an over-stimulation of the fight or flight reaction and hyperarousal of the sympathetic nervous system, leading to prolonged states of tension characterized by increased blood flow, muscle tone, and reaction time (Southwick, et al., 1998). CSA survivors often experience a dysregulation of cortisol and neurotransmitters which contribute to difficulty resolving the fight or flight reaction and returning to a pre-threat calm (Teicher, et al., 2002).

Van der Kolk (2000) proposes that treatment of CSA trauma should begin with somatic exercises that facilitate self-soothing and management of hyperarousal. These goals are integral to treatment because they provide the survivor with tools necessary to regulate their arousal during the challenging work of psychotherapy. Physical mastery should help the survivor feel able to regulate affective sensations in her body without the use of destructive self soothing behaviors, like substances or self-injury.

Berger (1994), an exercise psychologist, recommends that exercises used in the treatment of trauma should be pleasant, enjoyable, absent of interpersonal competition, predictable, moderately intense, and require rhythmic abdominal breathing. Yoga embodies all of these characteristics. Biological and

psychological research indicates that yoga is effective in promoting self soothing and affect regulation. Studies of cardio-vascular health have found that with regular practice yoga leads to lower blood pressure and slower respiration, which indicates a decrease in sympathetic nervous system activity (e.g., Vempati & Telles, 2002). Cortisol studies indicate that yoga has an equalizing effect, decreasing cortisol in people with abnormally high levels and increasing it in those with low levels (Carlson, Speca, & Patel, 2002). In addition, the sustained release of endorphins through physical activity can create a sustained sense of well being, which can counteract the historical association of endorphins with acute threat reactions (Westerlund, 1992). These findings suggest yoga may regulate the limbic system's stress response, which would help a survivor who has historically been unable to manage her hyperarousal.

Psychological findings lend further support to yoga's self-soothing function. After just one session, practitioners have experienced decreases in state and trait anxiety (Netz & Lidor, 2003). With regular practice scores on state and trait anxiety measures continued to decrease, along with increases in well-being, sleep, perceived health, and mental condition (Harinath, et al., 2004; Waelde, et al., 2004). Such benefits indicate that yoga can serve as a reliable tool for immediate and continuous self-soothing. A survivor's access to such a tool would contribute to her sense of mastery and control over her somatic experience as she engages in the stimulating and often frightening therapeutic process.

In addition to helping manage hyperarousal, yoga may help a survivor access her somatic awareness and combat her reliance of dissociative defenses. As has been discussed earlier, many trauma survivors manage the overwhelming terror associated with their abuse by numbing both physiologically and psychologically. Physiologically, the freeze response that many survivors may experience involves slowed heart rate and respiration, physical numbing to sensation, and dulling of awareness (Scaer, 2001). Psychologically, the survivor may have dissociated the somatic part of herself to avoid experiencing the intense pain of the abuse and the emotional reactions that followed. This dissociation then robs her of the resources and information provided by somatic awareness. A survivor who relies on somatic dissociation might not be able to sense or make meaning of her body's cues of danger, desire, discomfort, or other important signals (van der Kolk, 2003). In addition, memories of the abuse may not be available, because they have been dissociated from the cognitive self and relegated to the body as somatic memories and unexplainable physical ailments (Rothschild, 2000).

A sensitive and well managed yoga practice may provide a safe method for helping a survivor connect with her somatic experience and begin to integrate it into her sense of self. Yoga typically emphasizes a sustained awareness of the body's edge, or region of experience in which the body is experiencing sensation without pain. This awareness is difficult for many to perceive, but encourages attunement and trust of the body's cues. As a survivor engages in yoga, she may be able to integrate somatic and cognitive functions by actively choosing to rest

or continue during the practice, thus learning to modulate her body's historically out-of-control sensations. The coordination of the body needed in yoga may also help strengthen coordination between the brains hemispheres, which would further strengthen the survivor's ability to integrate somatic experiences (Teicher, et al., 2002; van der Kolk, 2003).

As the survivor practices yoga, she will begin to sense what her body likes and does not like, needs and does not need. This awareness could increase access to her emotions and the somatic sensations related to them. Access to emotions can provide the survivor with more information about her present experience, which can help her incorporate emotions into a more integrated sense of her self. The emotional awareness may also lead to greater access to dissociated memories and sensations. Somatic memories, which are believed to be sensory imprints of abuse which have yet to be made conscious, may become available (Rothschild, 2000). These memories may be crucial to the remembrance and integration phase of the psychotherapy in which an integrated narrative of events is created. Importantly, the stimulation of such memories should be a gradual process, as catharsis would be over-stimulating and re-traumatized for a survivor not yet prepared for the memory. If well managed, yoga can ultimately facilitate greater somatic awareness, and the survivor can begin to use the body as a source of conscious containment, rather than relying solely on the intellect and psychosomatic symptoms to manage affect and memory. The survivor can use tools from a yoga practice, such as breathing and relaxing postures, to actively engage the body as a resource for healing.

Increased access to the body as a safe, containing, and informative element of the self through yoga can help to alter a survivor's perception of her body. Survivors of CSA have lower body satisfaction than women without such abuse (Armsworth, Stronck, & Carlson, 1999; Wenninger & Heiman, 1998). This poor body image includes critical feelings about multiple body parts and functions, as well as poor evaluations of physical health and attractiveness. CSA survivors can experience their bodies as infirm, permeable, bad, dirty, evil, and nasty. These beliefs may be associated with the high prevalence of destructive behaviors targeting the body, such as eating disorders and self-mutilation.

Engaging in particular physical exercises can help combat these negative beliefs about the body by providing an experience in which the body is perceived as powerful, whole, and trustworthy (Westerlund, 1992). Yoga may be an activity of particular utility in facilitating an improved body image. Studies have found that after practicing yoga consistently for only a brief time, subjects reported increases in body awareness, satisfaction, self-acceptance, and self-trust (Clance, Mitchell & Engelman, 1980; Daubenimer, 2003). Such improved connection to the body may be associated with yoga's emphasis on internal standards versus the external standards of fitness usually encountered in American exercise culture. These internal standards involve tracking the body's sensations of muscular pain, openness, and constriction and the breath's ease and depth. Fostering a connection to these sensations can help a survivor trust the body as a source of information which is connected to her overall experience of comfort or discomfort. Acknowledging and working through the fear or shame

associated with trusting the body's information may be critical to moving toward a more positive body image.

Through facilitating a greater connection to and trust of the body as an essential part of the survivor's experience, she may then come to appreciate and even like her body. In yoga, the body becomes more flexible, strong, and coordinated which could contribute to a greater sense of physical mastery. A body that is strong and attuned may be perceived as containing, which would be a new experience for a survivor who historically related to her body as porous and out-of-control. As the body becomes a source of pleasure, energy, security, and calm it may become a vital component to a survivor's self esteem.

With increased self-trust, physical mastery, and bodily self-esteem, a survivor may be able to explore difficulties with interpersonal bodily boundaries within her yoga practice. The perpetration of sexual abuse on a child blurs the rules about who has ownership and privilege to the child's body. Because the abuser used the child's body as a vehicle for his/her own needs, many survivors have difficulty setting boundaries regarding access to their bodies (Westerlund, 1992). This difficulty is likely associated with the prevalence of revictimization among survivors, as her defensive need to acquiesce to another's desire for her body is reenacted as an adult.

Engagement in a guided yoga practice provides an opportunity to address and practice bodily boundary setting. First, a yoga practice directed by an instructor presents a dynamic in which the instructor seems in control of the students' bodily movements. However, a critical element of yoga instruction is to

encourage and even insist that students let their own physical, emotional, and spiritual needs guide their practice and use the instructions simply as suggestions of ways they may move if they choose. This scenario creates a dilemma for many students as they struggle with fears of expectation, judgment, and disappointment from the instructor (Barrett, 2003). This dilemma, which is likely connected to socialization regarding teachers and students, would likely carry an additional charge with a CSA survivor who has learned that she must acquiesce to an authority who wants to control her body. However, with the support of psychotherapy, a survivor may be more willing to challenge herself and follow internal standards while carefully tracking the fears and beliefs that this triggers.

In addition to determining who is in control of the survivor's choices to move within a yoga practice, a survivor may have the opportunity to navigate her comfort with proximity and touch. If the survivor chooses to work within a group class setting, she will be near others while experiencing her body's strengths and vulnerabilities. Fears and beliefs about this proximity and social exposure can be processed in psychotherapy, and the survivor can determine her own comfort level and needs regarding these dimensions. Touch may be an issue in a group class or private lesson. Some teachers abstain from providing physical adjustments and others engage in full body contact during instruction. Negotiating the 'if, when, and how' of touch during her yoga practice can help strengthen a survivor's assertion of her bodily boundaries.

Yoga can provide a survivor with an opportunity to confront and work through many difficulties which originated from the abusive situation. If practiced mindfully within the framework of a safe and containing psychotherapy, yoga can facilitate an integrated approach to healing which addresses the survivor's biological, psychological, and social needs.

*Assessment*

The ideal situation in which to integrate yoga into a treatment plan would involve a therapy where CSA trauma is identified as the focal treatment issue at the inception of treatment. In this scenario, the therapist is able to assess the trauma related somatic problems and needs at the onset, and weave yoga into the entire treatment. However many scenarios may involve CSA trauma and related symptoms which surface later in treatment. The assessment guidelines presented here are appropriate for assessing the utility of yoga at any point in treatment.

Before considering the integration of yoga into a treatment, the therapist should assess his or her personal and professional comfort with incorporating adjunctive interventions into the therapeutic frame. Therapists should be aware of their theoretical orientation and be able evaluate their attitudes about introducing an adjunct at different stages of therapy and the possible effects of such an introduction on the treatment. A therapist who plans to use an adjunct should be able to suggest, structure, and incorporate therapeutic information generated outside of the treatment hour with consistency and integrity.

Before deciding that yoga should be used in a treatment, the clinician needs to assess the client's presenting complaints and goals. As in any assessment, the client's symptoms should be articulated. These symptoms may be somatic, cognitive, emotional, social, or relational, and the therapist should be attuned to the interrelatedness of the symptoms. Somatic symptoms and those which refer to the body as a source of difficulty should alert the clinician to the possibility of yoga as a useful adjunct.

The initial assessment should also explore the client's history. The history taking would include the history of the symptoms as well as a developmental history. The clinician should directly inquire about sexual assaults or abuse in the client's childhood and adulthood. A reported history of CSA should alert the clinician to the possibility of somatically based problems, such as hyperarousal, dissociation, boundary problems, and self-destructive behaviors.

The therapist and client should work together to reflect upon connections in the chronology of developmental events and presenting symptoms. If the client presents with somatically based symptoms, the clinician should provide basic psycho-education about the effects of childhood trauma on the body and mind (as detailed in Chapters 2 and 3).

This assessment should culminate in a determination of whether the therapist feels competent to serve the client's needs. With clients who are presently in severe crisis or experiencing debilitating psychosis or dissociation, the clinician should focus solely on stabilization and may consider hospitalization. With clients who present with a known history of CSA and trauma related

symptoms and are deemed appropriate for outpatient treatment, the clinician may introduce his or her initial treatment recommendations. This may involve weekly sessions of individual talk therapy and the addition of weekly yoga as an adjunct, with the goal of an integrated, efficient, and comprehensive treatment. The client should be made aware that a more detailed treatment plan will be developed in the initial phase of treatment, should she choose to continue.

At this point, the clinician should invite the client's thoughts and feelings about the proposed treatment modalities. The client's history and attitudes about therapy should be articulated. In addition, her history and attitudes about physical activity in general and yoga in particular need to be explored. If the client determines that she is interested in continuing the proposed treatment, she should receive a full physical examination by a medical doctor to ensure that it is medically appropriate.

*Treatment Planning*

Treatment planning with a client who presents with issues primarily related to CSA trauma should follow the standards of care which involves three stages: afety, integration, and reconnection (Courtois, 1988). The initial phase of such planning should focus on psycho-education regarding these stages and the rationale for this model (see Ch 4). Treatment goals will be developed for each stage, and should consider somatic needs relevant to each stage. Yoga should be presented as an intervention to address the somatic components of the safety, integration, and reconnection. The connection between a specific problem or symptom and the use of yoga to address it should be made explicit so that the

client approaches the intervention with full awareness of her intention and is able to track her progress. A clinician and client may opt to use yoga at certain stages and not others and in different ways depending on the treatment focus at the time.

Regardless of the client's degree of awareness and familiarity with the process of trauma treatment, establishing safety should always be the first phase of treatment. Goals within the safety phase include stability of crises, management of extreme states, containment of endangering behaviors and relationships, and development of basic trust within the therapeutic relationship. Clients may range in their need for safety and stabilization, however, all clients will need a period of time to develop trust and build a foundation of skills to help modulate arousal.

The primary functions of yoga during the safety stage of treatment would center on affect modulation, safety in the body, and healthy distraction from intrusive symptoms. Problems or symptoms which could be addressed through the adjunctive use of yoga during the safety stage include:

- chronic hyperarousal, inability to self-soothe
- poor sense of bodily boundaries
- health concerns and somatization
- self-injury
- eating disorder or body image disturbance
- substance abuse
- self-injury

- intrusive thoughts, affects, sensations
- chronic dissociation in face of perceived danger

The type of yoga practice chosen at this stage should emphasize relaxation and gentleness. A client who is extremely anxious about practicing yoga in a social setting may prefer to use an audio or visual medium for her practice. The emphasis of the practice during this stage should be on awareness of breath and bodily sensation. Styles that would be appropriate would be calming, relaxing, and slowly paced. Class titles that may serve this purpose would be Gentle Yoga, Kripalu, and Restorative. The safety phase has been successful when the client is consistently able to engage with activities of daily living, including engaging in the therapeutic encounter, without overwhelm and derailment. This may take months or years, depending on the survivor's difficulty managing arousal and the level of chaos within her life.

Once the client demonstrates a consistent stance of trust with the therapist and safety within herself, the therapist should introduce the remembrance and integration phase. The therapist should explicitly refer to their initial treatment plan and remind the client that now she has an opportunity to remember her traumatic history in order to make sense of it from a new perspective. It should be made explicit that the skills and stability gained in the safety phase have prepared her to approach the remembering in a way that should be less overwhelming and re-traumatizing than the remembering of her past. The client should know that she is involved in the pacing of remembering

and that when it threatens to become too overwhelming, she and the therapist will move back toward safety and stabilization.

The role of yoga in the remembrance phase is to access somatic and emotional information related to the trauma in order to create a more complete and integrated narrative of the abuse. With this more integrated memory, the survivor can relate to the past without having to dissociate aspects of the trauma which were previously too overwhelming. Ultimately, the memory then becomes a part of her history that can be reflected upon instead of defended against. Yoga can be a means of connecting the survivor to her body in a safe and contained way, so that she can become more conscious of previously dissociated elements of her experience. Problems or symptoms which could be addressed through yoga during the remembrance stage include:

- amnesia for affective and somatic components of events
- dissociation
- difficulty remaining grounded during remembering
- alexythymia
- difficulty naming affect
- somatic memories

Addressing these symptoms can be extremely stimulating for a survivor, and should be paced so that she continues to feel safe and in control of the process. The skills learned in the safety phase should remain a central element of treatment, and used integrally to balance self-soothing with the challenging exploration and remembrance. Yoga styles used during this phase should be

similar to those recommended when establishing safety, which emphasize gentleness and relaxation. Some survivors may feel that they need or want a more stimulating form of yoga during this time to gain greater access to sensations. In these cases, they may be directed toward classes with titles such as Hatha, Vinyasa, Iyengar, Yin, and Anusara.

The remembrance and integration stage should be considered complete when the survivor is able to relate her history of abuse without avoiding certain elements of the narrative or becoming emotionally overwhelmed. This new relationship to the memory requires extensive repetition and reworking. It should be expected that throughout this stage the survivor will encounter material that is too stimulating, and the work should slow and retreat to establishing safety in relation to this new material. Eventually, the client will become more confident in her ability to remember, integrate, and own her abuse history while remaining safe in herself and in the world.

With this new relationship to her abuse, the work moves toward reconnection. Reconnection is a broad term which refers to approaching the survivor's life from a perspective in which the abusive past is not the central component. Areas of her experience that need to be re-defined include her body image, self-esteem, sexuality, career, relationships, values, and interests. This is when she begins to approach her life as a survivor and not a victim.

Yoga during this phase can serve to foster the client's reconnection at many levels. She may now use yoga as a means of enjoying her body and feeling powerful in it. It may also offer a safe space for building community and

practicing interpersonal relationships in which her abuse is not central. Issues for which yoga may be an appropriate intervention during reconnection include:

- body image
- self-defense
- interpersonal boundaries
- sexuality
- bodily pleasure
- support system

At this stage, the survivor may explore new relationships to yoga. She may want to attempt more vigorous styles which emphasize endurance, strength, and power, such as Asthanga, Bikram, White Lotus, or Power Vinyasa. Yoga can now become part of her daily life if she chooses, or a tool for self-soothing capabilities as she explores other physical activities of interest.

From the beginning of the treatment to the end, the intention of each intervention should be made explicit to the survivor so she feels in control of the process. With a clear treatment plan which identifies the survivor's needs and how yoga will address them, both the therapist and client can maintain a sense of mindfulness throughout the treatment.

*Intervention*

Certain guidelines should be followed to best incorporate the yoga into the treatment and capitalize on its benefits. These guidelines are intended to ensure that the adjunct is applied in a mindful, appropriate, client-centered, and integrated way.

When yoga is first introduced as an adjunct, the clinician should explore the client's reactions to the suggestion. This exploration should address the client's cognitive, affective, and somatic experience when contemplating yoga. Because the suggestion is made at the beginning of the treatment, the clinician should be aware of the relational dynamics involved and consider that the client might have difficulty saying no. Therefore, the therapist should provide the rationale for the adjunct and then state explicitly that no immediate decision should be made. Instead, the therapist should recommend that they take a couple weeks to think it through and encourage the client to bring her thoughts about it to session as they decide.

If and when the client determines that she is interested in pursuing yoga as a part of her treatment, there should be a thorough discussion of her modality options. The therapist should offer three possibilities: audio/video led instruction, private lessons, or group classes. An exploration of the pros and cons of each from the therapist's and client's perspectives should follow. The therapist should keep in mind that audio/visual led instruction would likely be the least overwhelming modality. The distinction between private versus group classes in terms of perceived safety will vary depending on the client's particular history and psychology. Whichever modality is chosen, the psychological and social reasons for the choice should be made explicit.

Regardless of modality, the next step is to determine the yoga style that seems most appropriate for the client and the stage of therapy. As mentioned in the treatment planning section, the beginning stage of treatment involves safety,

and the yoga should be calming, relaxing, and focused on self-soothing. Later, in the remembrance and reconnection stages, a more active and stimulating practice may be more appropriate. Depending on the client's history of physical activity and familiarity with yoga, a variety of styles may suit these goals. The therapist should have a basic knowledge of styles and be able to converse about their emphases.

Once the modality and style have been explored in terms of their therapeutic relevance, the task is to search for the appropriate practice. If a client has chosen to begin with audio/video led instruction, the therapist should provide a list of tapes, CDs, or DVDs which seem appropriate (see Appendix A for list of suggested material). For clients who chose private or group classes, a list of teachers and classes in the client's area can be provided (see Appendix A for resources and referral list). Regardless of the chosen modality, the therapist should initiate a conversation about how the client will determine which tape, teacher, or class she would prefer. This conversation is intended to encourage the client to access her own standards so that she may begin asserting her needs within the therapeutic context. A writing journal can be introduced at this time as a place for the survivor to record these self-defined standards and refer to it as she evaluates her options.

Clients who are interested in private or group classes should develop a *Teacher Evaluation* with the therapist to use while shopping for the right instructor. This evaluation is based on the standards the survivor set for her safety and comfort and involves approaching a yoga instructor by phone, email,

or in person to inquire about his or her teaching practices. If a client is too uncomfortable to conduct a interview, she should be encouraged to observe a teacher's class and use her questions to guide her evaluation. These questions should be generated cooperatively. Table 4 provides a list of issues and questions a therapist can suggest as the interview questions are generated. Many of these issues are also relevant to the selection of appropriate audio/video material.

A client's fears about conducting the evaluation should be explored. Again, this evaluation is intended to make the client active in her decision making and conscious of her standards for comfort. Resistant to this assertion is therapeutically relevant and should be fully explored before the client pursues a yoga practice. For clients who determine they are not able to conduct this evaluation, either through an interview or observation, they should be directed toward audio/video instruction which will be less interpersonally daunting.

Table 4

*Teacher Evaluation*

| Issues to Consider | |
|---|---|
| Gender/ Age/ Ethnicity/ Sexual Orientation | Method of working with beginners |
| Amount of teaching experience | Competition/ Pressure to perform |
| Teaching philosophy | Judgment |
| Use of touch in teaching | Spiritual focus |
| Response to students who need to rest | Active practice vs. Relaxation |
| Response to students who leave class | Availability |
| | Cost |

Before the client engages in her first therapeutically oriented yoga practice, she should be introduced to the use of a *Mind/ Body Journal.* This journal is essential as the link between the yoga practice and the talk therapy sessions. The name of the journal serves to remind the client of the integrated nature of her somatic and psychological experience and defines the goal of the journal as supporting this integration. The client should use the journal both before and after her yoga practice to increase awareness of her experience before, during, and after. At the beginning of the treatment the client should follow a structured journaling format, as outlined in Table 5 (Appendix B provides

questions in a format to give to clients). This initial journaling focuses on identifying and naming her somatic experience and encouraging self-soothing.

Table 5

*Structured Mind/Body Journaling*

| Before Practice |
| --- |
| What is the quality of your thoughts? Positive vs. Negative? |
| What is the quality of your emotions? Happy vs. Sad? Anxious vs. Calm? |
| What is the quality of your physical body? Comfortable vs. Uncomfortable? |
| **After Practice** |
| What poses were comfortable/ uncomfortable? |
| What parts of the body are tightest/sorest/strongest? |
| What was your experience of teacher/ students? |
| How did you perceive your body? |
| When did you feel anxious? |
| When did you feel disconnected? |
| What is the quality of your thoughts now? Positive vs. Negative? |
| What is the quality of your emotions now? Happy vs. Sad? Anxious vs. Calm? |
| What is the quality of your physical body now? Comfortable vs. Uncomfortable? |
| What things do you want to explore with/ get support from your therapist? |

The first yoga practice should be no greater than three days before a scheduled therapy session so that the experience can be processed soon after. The client and therapist should evaluate the first experience in terms of comfort

and safety. Both the content and process of journaling should be explored. This processing may take multiple sessions, and the client should decide if and when she wants to return to yoga. After exploring the first experience, the client is invited to recommit to pursuing yoga as part of her treatment, and any changes to the modality, style, or teacher should be considered at this time.

Once the client is committed to integrating yoga into her treatment, she and her therapist should determine the frequency of her practice. At the beginning, it is recommended that the client practice at least once but no more than three times per week to avoid over-stimulation. As the therapy progresses this frequency may alter, however, such changes should be explicit and mindfully connected to the presenting treatment goals. The use of the yoga practice and the Mind/Body Journal will need to adapt as the treatment progresses. At each stage and with each presenting problem, the yoga practice should be explicitly integrated and attended to within the therapeutic relationship.

*Pitfalls and Precautions*

Throughout the treatment, safety and stability should be paramount, and the survivor should come to rely on yoga as a resource for self-soothing. When yoga fails to serve this function, its use should be re-evaluated. A number of issues may contraindicate the adjunctive use of yoga within the treatment, and should be monitored throughout.

Yoga should not be recommended when a client is in extreme crisis, or is experiencing severe psychotic or dissociative symptoms. Some evidence suggests that meditation, a fundamental component of yoga, can exacerbate

symptoms when a person is in a vulnerable psychological state (Nespor, 1985). When a client experiences crisis or severe symptomatology stabilization and symptom management should be the primary therapeutic tasks, regardless of the stage of treatment. If a client has been practicing yoga when the crisis or symptoms arise, the practice should be terminated until stabilization is achieved.

Another potential problem involves clients who are unable to dissent when the therapist suggests using yoga in the treatment. For a client with a history of CSA, she may be accustomed to accommodating the wishes of a person in authority, particularly when the wishes involve her body. The therapist must be aware of this relational dynamic, and might benefit from naming and exploring it with the client. It is imperative that the therapist communicate that yoga is an option to be pursued if the client wishes, and that successful treatment is not dependent it.

Throughout the treatment, the therapist should explore the client's feelings about her yoga. At many times, the yoga may be too stimulating and overwhelming. Elements of the practice which may be triggering of the abuse and its dynamics include particular postures, religious symbolism, or simply the stimulation of bodily sensations. When the client appears to be decompensating or regressing in a non-productive way, both the client and therapist should evaluate the role of yoga in this process. The therapist should communicate her commitment to the client's health and make adjustments to the treatment plan, including terminating the use of yoga, when appropriate. Throughout the treatment, the yoga practice should be open to the client's need to modify, back

off, slow down, or use alternative methods. Monitoring for potential problems with the practice will help increase the survivor's awareness of her internal experience as well as strengthen her ability to set boundaries within the therapeutic relationship.

Boundaries may become a problem within the yoga practice itself. A client may experience a teacher or fellow student as too aggressive, too intimate, or otherwise unhelpful. Because of the high potential for accommodating behavior, a survivor may not be aware of her discomfort or be able to assert her needs. A therapist should be alert to how the client speaks of her teacher and classmates, and may need to call attention to power dynamics that appear repetitive of the abuse dynamic. The therapist may help the client role play or problem solve scenarios in which she asserts her needs within the yoga setting.

Another set of problems may involve the client engaging in the yoga in a self-punishing way that reinforces her negative perceptions of her body and herself. She may become more self-conscious of her body as she engages in a physical activity. This self-consciousness may lead to increased body image problems and related symptoms. Some yoga practitioners become compulsive about their practice and use yoga to control, rather than enjoy, the body. Some survivors may be more prone to such compulsivity if their histories have involved punishing the body, particularly with eating disorders or compulsive exercise. Again, the therapist must be aware and alert to how the client speaks of her body in relation to her practice.

When the therapist becomes aware of any issues which suggest that yoga is increasing the client's suffering rather than promoting her healing, he or she should immediately re-evaluate and modify the treatment. The use of the journal and regular psychotherapy sessions make this monitoring possible. As problems arise, as they likely will, they provide an opportunity to learn more about the client and her process. Each pitfall should be explored and worked-through thoroughly, with the ultimate goal of increasing the client's ability to own her experience and her healing.

## X. Summary and Recommendations

Being sexually abused as a child can have a devastating effect on a woman's life. The abuse overwhelms the child's body and mind and can produce an array of mental and physical health disturbances that carry into adulthood. As clinicians, we often come in contact with a survivor when her capacity to manage the complex burden of the traumatic past has reached its limit. The comprehensive damage of child sexual abuse makes treating survivors emotionally and intellectually challenging. This study was developed to stimulate creativity and resourcefulness in clinicians who are faced with the challenge of supporting and treating survivors of childhood sexual abuse.

Though often overlooked in the literature, the role of the body in sexual abuse is central to the unique cluster of physiological and psychological symptoms that frequently plagues survivors. Physiologically, the young child's stress response system is not able to manage the overwhelming terror of the event, which may eventually impair the functioning of this system. Therefore, the body is both overwhelmed externally by the perpetrator and internally by the flooding of affect and panic. This constant state of stress may be associated with symptoms of anxiety, dissociation, and somatization. Because the body is so overwhelmed, the child's psychological relationship to it may become distorted. Survivors frequently perceive their bodies as out of control, damaged, dirty, and worthless. The combination of dysfunction within the stress response system with a severely negative body image contributes to the prevalence of self-destructive

behaviors aimed at the body, including substance abuse, eating disorders, and self-injury.

Given the body's central role in the trauma and subsequent psychopathology, treatment should directly address the body's role in healing. A rich tradition of somatic psychotherapies has provided a foundation of theory and practice for integrating the body and mind in psychotherapy. This study aimed to incorporate the principles of somatic psychotherapies and the standards of care for sexual abuse survivors in its evaluation of yoga as an appropriate and effective adjunctive intervention. The use of yoga as an adjunct allows the therapist and client to access the client's bodily experience and integrate this information within the context of a stage based trauma treatment which emphasizes safety, integration, and reconnection. Using a somatic approach such as yoga will help the survivor heal in a more holistic and comprehensive way, as she is able to develop a cognitive, emotional, relational, *and* somatic understanding of her traumatic history.

The proposed use of yoga in serving this goal is based on a limited amount of research of the psychological effects of yoga. Further research is needed to systematically identify the myriad of possible psychological effects of yoga. Interest in the practice is growing, and during the course of this writing the psychological research on yoga as multiplied. Hopefully, the field will continue to access the potential of this alternative method to promoting psychological health.

Since there is little empirical evidence that the practice of yoga would directly alter a client's mental health, the intervention presented here does not

intend for yoga to work on its own. Instead, the yoga serves as an exercise to stimulate the client's relating to her body. As such, the utility of the yoga practice is not in its direct effect but in the process that it facilitates. Further research should be conducted which emphasizes the qualitative process of yoga practice. This study emphasizes the cognitive and intrapsychic meaning of a survivor's experience of yoga, which may be further explored through qualitative research methods. This intervention would likely be best investigated via case studies in which individual clients' experiences of the adjunctive use of yoga are documented. Clinicians interested in applying the method proposed here should do so mindfully and track the results. Further investigation of this intervention should attend to risk factors, contraindications, and negative therapeutic reactions.

As a community of clinicians, we should continue to explore creative methods for best serving those clients whose lives have been devastated by childhood sexual abuse. These clients' needs are holistic and it is our ethical responsibility to aim toward providing comprehensive treatment. With continued inspiration and dedication, we may develop interventions which allow both clients and clinicians to maintain a deep faith in the possibility of healing from the tragedy of such abuse.

# References

Alpert, J., Brown, L., & Courtois, C. (1998). Symptomatic clients and memories of childhood abuse: What the trauma and child sexual abuse literature tells us. *Psychology, Public Policy, & Law*, *4:*4, 941-995.

American Psychological Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR (Text Revision).* Washington, DC: American Psychiatric Press.

Armsworth, M., Stronk, K., & Carlson, C. (1999). Body image and self-perception in women with histories of incest. In J. Goodwin & R. Attias (Eds.) *Splintered reflections: Images of the body in trauma,* pp. 137-153. New York: Basic Books.

Arnella, J., & Ornduff, S. (2000). Manifestations of bodily concern in sexually abused girls. *Bulletin of the Menninger Clinic*, *64:*4, 530-542.

Arpita. (1991). Physiological and psychological effects of hatha yoga: A review of the literature. *The Journal of The International Association of Yoga Therapists*, 1-28.

Attias, R., & Goodwin, J. (1999). Body-image distortion and childhood sexual abuse. In J. Goodwin & R. Attias (Eds.), *Splintered reflections: Images of the body in trauma,* pp. 155-166. New York: Basic Books.

Barrett, J. (2003). The trouble with touch. *Yoga Journal.* Retrieved October 23, 2003 from http://www.yogajournal.com/views/899_1.cfm.

Bass, E. & Davis, L. (1994*). The Courage to Heal: A Guide for Women Survivors of Child Sexual Abuse (3rd Edition).* San Francisco: Collins.

Bauman, A. (2002). Is yoga enough to keep you fit? *Yoga Journal.* Retrieved January 22, 2003 from http://www.yogajournal.com/practice/739_1.cfm

Becker, I. (2000). Use of yoga in psychiatry and medicine. In P. Muskin (Ed.) *Complementary and Alternative Medicine and Psychiatry*, 107-145. Washington, DC: American Psychiatric Press.

Beitchman, J., Zucker, K., & Hood, J. (1992). A review of the long-term effects of child sexual abuse. *Child Abuse & Neglect*, *16*:1, 101-118.

Benagh, B. (2000). Asthma Answers. *Yoga Journal.* Retrieved August 26, 2004 from http://www. yogajournal.com/health/127_1.cfm.

Berger, B. (1994). Coping with stress: The effectiveness of exercise and other techniques. *Quest, 46,* 100-119.

Berger, B., & Owen, D. (1992). Mood alteration with yoga and swimming: Aerobic exercise may not be necessary. *Perceptual and Motor Skills, 75,* 1331-1343.

Bernhardt, P. (1992). *Somatic Approaches To Shock: A Review of the Work of the Bodynamic Institute.* Novato, CA: Bodynamic Institute.

Birkel, D., & Edgren, L. (2000). Hatha yoga: Increased vital capacity of college students. *Alternative Therapies in Health & Medicine, 6*:6.

Bower, G., & Sivers, H. (1998). Cognitive impact of traumatic events. *Development & Psychopathology*, *10*:4, 625-653.

Bremner, J. (2003). Long-term effects of childhood abuse on brain and neurobiology. *Child & Adolescent Psychiatric Clinics of North America*, *12*:2, 271-292.

Bremner, J., Randall, P., & Vermetten, E. (1997). Magnetic resonance imaging-based measurement of hippocampal volume in posttraumatic stress disorder related to childhood physical and sexual abuse: A preliminary report. *Biological Psychiatry*, *41*:1, 23-32.

Bremner, J. Vythilingam, M., & Anderson, G. (2003). Assessment of the hypothalamic-pituitary-adrenal axis over a 24-hour diurnal period and in response to neuroendocrine challenges in women with and without childhood sexual abuse and posttraumatic stress disorder. *Biological Psychiatry*, *54*:7, 710-718.

Briere, J. & Runtz, M. (1993). Childhood sexual abuse: Long-term sequelae and implications for psychological assessment. *Journal of Interpersonal Violence*, *8*:3, Special issue: Research on treatment of adults sexually abused in childhood, 312-330.

Browne, A. & Finkelhor, D. (1986). Impact of child sexual abuse: A review of the research. *Psychological Bulletin*, *99*:1, 66-77.

Brownmiller, S. (1975). *Against Our Will: Men, Women and Rape*. New York: Simon & Schuster.

Burnam, M., Stein, J., & Golding, J. (1988). Sexual assault and mental disorders in a community population. *Journal of Consulting & Clinical Psychology*, *56*:6, 843-850.

Carlson, L., Speca, M., Patel, K., & Goodey, E. (2003). Mindfulness-based stress reduction in relation to quality of life, mood, symptoms of stress and levels of cortisol, dehydroepiandrosterone sulfate (DHEAS) and melatonin in breast and prostate cancer outpatients. *Psychoneuroendocrinology, 29*, 448-474.

Chaudhuri, H. (1975). Yoga psychology. In *Transpersonal psychologies: Perspectives on the mind from seven great spiritual traditions.* San Francisco: Harper Collins.

Chu, J., & Dill, D. (1990). Dissociative symptoms in relation to childhood physical and sexual abuse. *American Journal of Psychiatry*, *147*:7, 887-892.

Clance, P., Mitchell, M., & Engelman, S. (1980). Body cathexis in children as a function of awareness training and yoga. *Journal of Clinical Child Psychology,* Spring, 82-85.

Coulter, D. (2001) *Anatomy of Hatha Yoga.* Honesdale, PA: Body and Breath.

Courtois, C. (1997). Guidelines for the treatment of adults abused or possibly abused as children (with attention to issues of delayed/recovered memory). *American Journal of Psychotherapy, 51*:4, 497-510.

Daubenmier, J. (2003). A comparison of Hatha yoga and aerobic exercise on women's body satisfaction. *Dissertation Abstracts International: Section B, 63*:9, 4415.

Davidson, P., & Parker, K. (2001). Eye movement desensitization and reprocessing (EMDR): A meta-analysis. *Journal of Consulting & Clinical Psychology*, *69*:2, 305-316.

DeBellis, M. (1999). Developmental traumatology: Neurobiological development in maltreated children with PTSD. *Psychiatric Times,* 16:9.

DeBellis, M., Chrousos, G., & Dorn, L. (1994) Hypothalamic-pituitary-adrenal axis dysregulation in sexually abused girls. *Journal of Clinical Endocrinology & Metabolism, 78*:249.

Department of Health & Human Services. (2002). Overview of Child Abuse and Neglect. Retrieved from http://nccanch.acf.hhs.gov/topics/overview/index.cfm on January 9, 2003.

Derezotes, D. (2000). Evaluation of yoga and meditation training with adolescent sex offenders. *Child aand Adolescent Social Work Journal, 17*:2, 97-113.

Dohm, F., Striegel-Moore, R., & Wilfley, D. Self-harm and substance use in a community sample of black and white women with binge eating disorder or bulimia nervosa. *International Journal of Eating Disorders*, *32*:4, 389-400.

Dreissen, M., Hermann, M., & Stahl, K. (2000). Magnetic resonance imaging volumes of the hippocampus and the amygdala in women with borderline personality disorder and early traumatization. *Archives of General Psychiatry*, *57*:12, 1115-1122.

Eckberg, M. (2000). *Victims of Cruelty: Somatic Psychotherapy in the treatment of post-traumatic stress disorder.* Berkeley, CA: North Atlantic.

Engelman, S., Clance, P., & Imes, S. (1982). Self and body-cathexis change in therapy and yoga groups. *Journal of the American Society of Psychosomatic Dentistry and Medicine, 29*:3, 77-88.

Enns, C., Campbell, J., & Courtois, C. (1998). Working with adult clients who may have experienced childhood abuse: Recommendations for assessment and practice. *Professional Psychology: Research & Practice, 29*:3, 245-256.

Federn, P. (1953). Some variations in ego feeling. In P. Federn (Author) *Ego psychology and the psychoses,* pp. 25-37. Oxford, England: Basic Books.

Finkelhor, D., & Browne, A. (1985). The traumatic impact of child sexual abuse: A conceptualization. *American Journal of Orthopsychiatry*, *55*:4, 530-541.

Fowler, P. (2002). *Turning their world upside down: Yoga and teens suffering from depression.* Retrieved January 30, 2003, from http://www.yogachicago.com/nov02/depression.shtml

Freud, S. (1923/ 1961). The Ego and the Id. In J.Strachey (Ed. & Trans.), *The Standard Edition of the Complete Psychological Works of Sigmund Freud, 19,* pp. 631-658. London: Hogarth Press.

Galantino, M., Bzdewka, T., & Eissler-Russo,J. (2004). The impact of modified hatha yoga on chronic low back pain: A pilot study. *Alternative Therapies in Health & Medicine, 10*: 2, 56-59.

Garfinkel, M., Schumacher, H., Husain, A., Levy, M., & Reshetar, R. (1994). Evaluation of yoga based regimen for treatment of osteoarthritis of the hands. *Journal of Rheumatology, 21,* 2341-2343.

Garfinkel, M., Singhal, A., Katz, W., Allan, D., Reshetar, R., & Schumacher, H. (1998). Yoga-based intervention for carpal-tunnel syndrome: A

randomized trial. *Journal of American Medical Association, 280,* 1601-1603.

Gharote, M., Ganguly, S., & Moorthy, A.. (1976). Effect of yogic training on minimum muscular fitness. *Yoga Mimamsa, 18*:3.

Goodwin, J., & Attias, R. (1999). *Splintered reflections: Images of the body in trauma*. New York, NY, US: Basic Books.

Goodman, M., & Yehuda, R. (2002). The relationship between psychological trauma and borderline personality disorder. *Psychiatric Annals*, *32*:6, 337-345.

Grand, S., & Alpert, J. (1993). The core trauma of incest: An object relations view. *Professional Psychology: Research & Practice, 24*:3, 330-334.

Greendale, G., McDivit, A., Carpenter, A., Seeger, L., & Huang, M. (2002). Yoga for women with Hyperkyphosis: Results of a pilot study. *American Journal of Public Health, 92,* 1611-1614.

Guerin, J. (1993). *The use of sport and exercise training for adult women psychotherapy clients with Post-Traumatic Stress Disorder.* Unpublished doctoral dissertation, Temple University, Philadelphia. Cited in Hayes, K. (1999), *Working it Out: Using exercise in psychotherapy.* Washington, DC: American Psychiatric Press.

Gura, T. (2003). The graceful change. *Yoga Journal.* Retrieved August 29, 2004 from http://www.yogajournal.com/health/1139_1.cfm.

Harinath, K., Malhotra, A., & Pal, K. (2004). Effects of hatha yoga and omkar meditation on cardiovascular performance, psychological profile, and melatonin secretion. *The Journal of Alternative and Complementary Medicine, 10*:2, 261-268.

Harrelson, G., & Swann, E. (2003). Yoga, Part 1: An Introduction. *Athletic Therapy Today, 8*:5, 32-24.

Harris, M. (1998). *Trauma recovery and empowerment: A clinician's guide for working with women in groups.* New York: Free Press.

Hays, K. (1991). Learning to trust: Rock climbing with women survivors. *Convergence*, 14-15.

Hays, Kate. (1999). *Working it Out: Using exercise in psychotherapy.* Washington, DC: American Psychiatric Press.

Herman, J. (1981). Father-daughter incest. *Professional Psychology: Research & Practice*, *2*:1, 76-80.

Herman, J. (1992) *Trauma and Recovery*. New York: Basic Books, Inc.

Herman, J., Perry, J., & van der Kolk, B. (1989). Childhood trauma in borderline personality disorder. *American Journal of Psychiatry*, *146*:4, 490-495.

Horowitz, M. (1976). *Stress Response Syndromes*. Oxford, England: Jason Aronson.

Janet, P. (1889/1973). *L'automatisme psychologique: essai de psychologie experimentale sur les formes inferieures de l'activite humaine*. Paris: Society Peirre Janet/ Payot.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science & Practice*, *10*:2, 144-156.

Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. *Journal of Behavioral Medicine, 8*:2, 163-190.

Kabat-Zinn, J., Massion, A., Kristeller, J., & Peterson, L. (1992). Effectiveness of meditation-based stress reduction program in the treatment of anxiety disorders. *American Journal of Psychiatry, 149*:7, 936-943.

Karpen, J. (2000). Get hip to prostate health. *Yoga Journal.* Retrieved September 2, 2004 from http://www.yogajournal.com/health/131_1.cfm.

Kelly, A. (2001). Rest for the weary. *Yoga Journal.* Retrieved September 2, 2004 from http://www.yogajournal.com/health/124_1.cfm.

Kimbrough, J. (2003).*Healing through the practice of yoga: Victims of sexual abuse.* Retrieved March 8, 2004 from http://health.groups.yahoo.com/group/stressmanegment/message/1934

King, J., Mandansky, D., & King, S. (2001). Early sexual abuse and low cortisol. *Psychiatry & Clinical Neurosciences*, *55*:1, 71-74.

Kinsey, A. (1953). *Sexual behavior in the human female.* Oxford: Saunders.

Koopman, C., Gore-Felton, C., & Classen, C. (2001). Acute stress reactions to everyday stressful life events among sexual abuse survivors with PTSD. *Journal of Child Sexual Abuse*, *10*:2, 83-99.

Kurtz, R. (1990). *Body-Centered Psychotherapy: The Hakomi Method: The Integrated Use of Mindfulness, Nonviolence and the Body.* Mendocino, CA: Life Rhythm.

Lebowitz, L., Harvey, M., & Herman, J. (1993). A stage-by-dimension model of recovery from sexual trauma. *Journal of Interpersonal Violence*, *8*:3, 378-391.

Lee, M. (1999). Phoenix Rising Yoga Therapy. In, D. Wiener (Ed.), *Beyond Talk Therapy: Using movement and expressive techniques in clinical practice* (pp. 205-221). Washington DC: American Psychiatric Press.

Léonard, S., Steiger, H., & Kao, A. (2003). Childhood and adulthood abuse in bulimic and nonbulimic women: Prevalences and psychological correlates. *International Journal of Eating Disorders*, *33*:4, 397-405.

Levine, P. (1997). *Waking the Tiger: Healing Trauma : The Innate Capacity to Transform Overwhelming Experiences.* Berkeley, CA: North Atlantic.

Levine, P. (2003). *Sexual healing: Transforming the sacred wound.* (Audio CD). Boulder, CO: Sounds True.

Levy, F. (1988). *Dance Movement Therapy: A Healing Art.* Reston, VA: The American Alliance for Health, Physical Education, Recreation, and Dance.

Manici, C., Van Ameringen, M., & MacMillan, H. (1995). Relationship of childhood sexual and physical abuse to anxiety disorders. *Journal of Nervous & Mental Disease*, *183*:5, 309-314.

Marcher, L., Ollars, L., & Bernhardt, P. (1990). *The Bodynamic Imprint Method of Resolving Birth Trauma.* Novato, CA: Bodynamic Institute.

Masson, J. (1992). *The assault on truth: Freud's suppression of the seduction theory.* New York: Penguin Books.

Maynes, L., & Feinauer, L. (1994). Acute and chronic dissociation and somatized anxiety as related to childhood sexual abuse. *American Journal of Family Therapy*, *22*:2, 165-175.

Medrano, M., Zule, W., & Hatch, J. (1999). Prevalence of childhood trauma in a community sample of substance-abusing women. *American Journal of Drug & Alcohol Abuse*, *25*:3, 449-462.

Mishra, R. (1973). *Yoga sutras: The textbook of Yoga psychology.* Garden City, NY: Anchor Press.

Morrison, J. (1989). Childhood molestation reported by women with somatization disorder. *Annals of Clinical Psychiatry*, *1*:1, 25-32.

Nelson, K. (2002). Gut feelings. *Yoga Journal.* Retrieved September 2, 2004 from http://www.yogajournal.com/health/781_1.cfm.

Nelson, S. (2002). Physical symptoms in sexually abused women: Somatization or undetected injury? *Child Abuse Review*, *11*:1, 51-64.

Nespor, K. (1985). The combination of psychiatric treatment and yoga. *International Journal of Psychosomatics, 32*:2, 24-27.

Netz, Y., & Lidor, R.(2003). Mood alterations in mindful versus aerobic exercise modes. *The Journal of Psycholgy, 137*:5, 405-419.

Newman, M., Clayton, L., & Zuellig, A. (2000). The relationship of childhood sexual abuse and depression with somatic symptoms and medical utilization. *Psychological Medicine*, *30*:5, 1063-1077.

Ogden, P. (2003). Building somatic resources: The theory and practice of sensorimotor psychotherapy in the treatment of trauma. *Dissertation Abstracts International: Section B, 64*:2, 972.

Parker-Pope, T. (2002). Market Stress? Give yoga a try; It may also help an aching back. *Wall Street Journal Online.* Retrieved July 25, 2002 from http://online.wsj.com/article_print/0,,SB102766430727295480,00.html

Parnell, L. (1999). *EMDR in the treatment of adults abused as children.* New York: W. W. Norton.

Patel, C. (1975). Yoga and biofeedback in the management of hypertension. *Journal of Psychosomatic Research, 19*, 355-360.

Pillay, A., & Schoubben-Hesk, S. (2001). Depression, anxiety, and hopelessness in sexually abused adolescent girls. *Psychological Reports*, *88*:3, 727-733.

Pribor, E., & Dinwiddie, S. (1992). Psychiatric correlates of incest in childhood. *American Journal of Psychiatry*, *149:*1, 52-56.

Pribor, E., Yutzy, S., & Dean, J. (1993). Briquet's syndrome, dissociation, and abuse. *American Journal of Psychiatry*, *150*:10, 1507-1511.

Price, J., & Armstrong, J. Battered wives: A controlled study of predisposition. *Australian & New Zealand Journal of Psychiatry*, *12*:1, 43-47.

Putnam, F. (2003). Ten-year research update review: Child sexual abuse. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*:3, 269-278.

Rao, P. (2003). Yogasanas in the context of bodywork in psychotherapy. *Journal of Indian Psychology, 21*:1, 28-33.

Raub, J. (2002). Psychophysiologic effects of hatha yoga on musculoskeletal and cardiopulmonary function: A literature review. *The Journal of Alternative and Complimentary Medicine, 8*:6, 797-812.

Reckling, A., & Buirski, P. (1996).Child abuse, self-development, and affect regulation. *Psychoanalytic Psychology*, *13*:1, 81-99.

Reed, D. (2000). *Yoga as a treatment modality.* Retrieved March 12, 2003, from http://www.davidreed.net/yoga.htm

Resnick, H., Yehuda, R., & Pitman, R. (1995). Effect of previous trauma on acute plasma cortisol level following rape. *American Journal of Psychiatry*, *152*:11, 1675-1677.

Riley, D. (2004). Hatha yoga and the treatment of illness. *Alternative Therapies, 10*:2, 20-21.

Rodriguez-Srednicki, O. (2001). Childhood sexual abuse, dissociation and adult self-destructive behavior. *Journal of Child Sexual Abuse*, *10*:3, 75-90.

Rothbaum, B. (1997). A controlled study of eye movement desensitization and reprocessing in the treatment of posttraumatic stress disordered sexual assault victims. *Bulletin of the Menninger Clinic*, *61*:3, 317-334.

Rothschild, B. (2000). *The Body Remembers: The psychophysiology of trauma and trauma treatment.* New York: W.W. Norton.

Ruiz, F. (2001). Focusing on A.D.D. *Yoga Journal.* Retrieved January 30, 2003 from http://www.yogajournal.com/health/597.cfm

Russinova, Z., Wewiorski, N., & Cash, D. (2002). Use of alternative health care practices by persons with serious mental illness: Perceived benefits. *American Journal of Public Health, 92*:10, 1600-1603.

Sandel, S., Chaiklin, S., & Lohn, A. (1993). *Foundations of Dance/Movement Therapy: The life and work of Marian Chace.* Columbia, MD: American Dance Therapy Association.

Saunders, B., Villeponteaux, L., & Lipovsky, J. (1992). Child sexual assault as a risk factor for mental disorders among women: A community survey. *Journal of Interpersonal Violence*, *7*:2, 189-204.

Saxe, Glenn N., Van der Kolk, B., & Berkowitz, R. (1993). Dissociative disorders in psychiatric inpatients. *American Journal of Psychiatry*, *150*:7, 1037-1042.

Scaer, R. (2001). *The body bears the burden: Trauma, dissociation, and disease.* New York: Haworth Press.

Scher, D., & Twaite, J. (1999). The relationship between child sexual abuse and alexithymic symptoms in a population of recovering adult substance abusers. *Journal of Child Sexual Abuse*, *8*:2, 25-40.

Schmidt, T., Wijga, A., & Von Zur Muhlen, A. (1997). Changes in cardiovascular risk factors and hormones during a comprehensive residential three month kriya yoga training and vegetarian nutrition. *Acta Physiologica, 640,* 158-162.

Shannahoff-Khalsa, D. (1996). Clinical case report: Efficacy of yogic techniques in the treatment of obsessive compulsive disorders. *International Journal of Neuroscience, 85*1-2, 1-17.

Shapiro, F. (2003). Eye movement desensitization: A new treatment for post-traumatic stress disorder. *Journal of Behavior Therapy & Experimental Psychiatry*, *20*:3, 211-217.

Shapiro, F., & Maxfield, L. (2002). Eye movement desensitization and reprocessing (EMDR): Information processing in the treatment of trauma. *Journal of Clinical Psychology,* Vol *58*:8, 933-946.

Shestopal, A. (1999). Psychological effects of physical exercise and yoga. *Dissertation Abstracts International: Section B,* 59:7, 3714.

Shipman, K., Zeman, J., & Penza, S. (2000). Emotion management skills in sexually maltreated and nonmaltreated girls: A developmental psychopathology perspective. *Development & Psychopathology*, *12*:1, 47-62.

Simpson, T. (2003). Childhood sexual abuse, PTSD and the functional roles of alcohol use among women drinkers. *Substance Use & Misuse*, *38*:2, 249-270.

Simpson, T., & Miller, W. (2002). Concomitance between childhood sexual and physical abuse and substance use problems: A review. *Clinical Psychology Review*, *22*:1, 27-77.

Smith, L. (2003). *Yoga and healing: The journey for sexual abuse survivors.* Retrieved August 12, 2003 from http://www.sunandmoonstudio.com/healing.html

Smolak, L., & Murnen, S. (2002). A meta-analytic examination of the relationship between child sexual abuse and eating disorders. *International Journal of Eating Disorders*, *31*:2, 136-150.

Southwick, S., Yehuda, R., & Wang, S. (1998). Neuroendocrine alterations in posttraumatic stress disorder. *Psychiatric Annals*, *28*:8, 436-442.

Sparrowe, L. (1999). Menstrual Essentials. *Yoga Journal.* Retrieved August 29, 2004 from http://www.yogajournal.com/health/130_10.cfm.

Stein, M., Walker, J., & Anderson, G. (1996). Childhood physical and sexual abuse in patients with anxiety disorders and in a community sample. *American Journal of Psychiatry*, *153*:2, 275-277.

Stein, M., Koverola, C., & Hanna, C. (1997). Hippocampal volume in women victimized by childhood sexual abuse. *Psychological Medicine*, *27*:4, 951-959.

Stein, M., Yehuda, R., & Koverola, C. (1997). Enhanced dexamethasone suppression of plasma cortisol in adult women traumatized by childhood sexual abuse. *Biological Psychiatry*, *42*:8, 680-686.

Straker, G., Watson, D., & Robinson, T. (2002). Trauma and disconnection: A trans-theoretical approach. *International Journal of Psychotherapy*, *7*:2, 145-158.

Streeck-Fischer, A.; van der Kolk, B. (2000). Down will come baby, cradle and all: Diagnostic and therapeutic implications of chronic trauma on child development. *Australian & New Zealand Journal of Psychiatry*, *34*:6, 903-918.

Stuart, S., & Noyes, R. (1999). Attachment and interpersonal communication in somatization. *Psychosomatics: Journal of Consultation Liaison Psychiatry*, *40*:1, 34-43.

Stukin, S. (2001). Health, hope and HIV. *Yoga Journal.* Retrieved September 4, 2004 from http://www.yogajournal.com/health/581_1.cfm.

Svatmarama. (2004). *The Hatha Yoga Pradipika.* Woodstock, NY: Yogavidya.

Szabo, A., Mesko, A., Caputo, A., & Gill, E. (1998). Examination of exercise-induced feeling states in four modes of exercise. *International Journal of Sport Psychology, 29*:4, 376-390.

Taneja, I. Deepak, K., & Poojary, G. (2004). Yogic versus conventional treatment in diarrhea-predominant type irritable bowel syndrome: A randomized controlled study. *Applied Psychophysiology & Biofeedback, 29*:1, 19-33.

Teicher, M., Andersen, S., Polcari, A. (2002). Developmental neurobiology of childhood stress and trauma. *Psychiatric Clinics of North America, 25*:2. Special issue: Recent advances in the study of biological alterations in post-traumatic stress disorder, 397-426.

Tran, M., Holly, R., Lashbrook, J., & Amsterdam, E. (2001). Effects of hatha yoga practice on the health-related aspects of physical fitness. *Preventative Cardiology, 4,* 165-170.

Ullman, S., & Brecklin, L. (2003). Sexual assault history and health-related outcomes in a national sample of women. *Psychology of Women Quarterly, 27*:1, 46-57.

van der Kolk, B. (2003). The neurobiology of childhood trauma and abuse. *Child & Adolescent Psychiatric Clinics of North America, 12*:2, 293-317.

van der Kolk, B., Burbridge, J., & Suzuki, J. (1997). The psychobiology of traumatic memory. Clinical implications of neuroimaging studies. In R. Yehuda & A. McFarlane (Eds.), *Psychobiology of posttraumatic stress disorder* (pp. 99-113). New York: New York Academy of Sciences.

van der Kolk, B. & Fisler, R. (1994). Childhood abuse and neglect and loss of self-regulation. *Bulletin of the Menninger Clinic, 58*: 2, 145-168.

van der Kolk, B., Pelcovitz, D., & Roth, S. (1996). Dissociation, somatization, and affect dysregulation: The complexity of adaption to trauma. *American Journal of Psychiatry, 153*(Suppl), 83-93.

van der Kolk, B., Perry, J., & Herman, J. (1991). Childhood origins of self-destructive behavior. *American Journal of Psychiatry, 148*:12, 1665-1671.

Vempati, R., & Telles, S. (2002). Yoga-based guided relaxation reduced sympathetic activity judged from baseline levels. *Pychological Reports, 90*, 487-494.

Waelde, L., Thompson, L., & Gallagher-Thompson, D. (2004). A pilot study of a yoga and meditation intervention for dementia caregiver stress. *Journal of Clinical Psychology, 60*:6, 677-687.

Wagner, R. (1997). Hatha yoga for individuals in alcoholism recovery. *Dissertation Abstracts International: B, 59*:5, 2441.

Watanabe, E., Fukuda, S., & Hara, H. (2002). Altered responses of saliva cortisol and mood status by long-period special yoga exercise mixed with meditation and guided imagery. *Journal of International Society of Life Information Science*, *20*:2, 585-587.

Weaver, T., Chard, K., & Mechanic, M. (2004). Self-injurious behaviors, PTSD arousal, and general health complaints within a treatment-seeking sample of sexually abused women. *Journal of Interpersonal Violence*, *19*:5, 558-575.

Weiss, E., Longhurst, J., & Mazure, C. (1999). Childhood sexual abuse as a risk factor for depression in women: Psychosocial and neurobiological correlates. *American Journal of Psychiatry*, *156:*6, 816-828.

Wenninger, K., & Heiman, J. (1998). Relating body-image to psychological and sexual functioning in child sexual abuse survivors. *Journal of Traumatic Stress, 11*:3, 543-562.

West, J., Otte., C., Geher, K., Johnson, J., & Mohr, D. (2004). Effects of hatha yoga and African dance on perceived stress, affect, and salivary cortisol. *Annals of Behavioral Medicine, 28:*2, 114-118.

Westerlund, E. (1992). *Women's sexuality after childhood incest*. New York: W. W. Norton.

Wiederman, M., Sansone, R., & Sansone, L. (1999). Bodily self-harm and its relationship to childhood abuse among women in a primary care setting. *Violence Against Women*, *5*:2, 155-163.

Willis, P. (2003). *Trauma Yoga.* Retrieved August 12, 2003 from http://www.abc.net.au/catalyst/stories/s832022.htm.

Winnicott, D. (1975). *Through paediatrics to psycho-analysis: Collected papers*. Philadelphia: Brunner/Mazel.

Wonderlich, S., Crosby, R., & Mitchell, J. (2001). Eating disturbance and sexual trauma in childhood and adulthood. *International Journal of Eating Disorders*, *30*:4, 401-412.

Wonderlich, S., Wilsnack, R., & Wilsnack, S. (1996). Childhood sexual abuse and bulimic behavior in a nationally representative sample. *American Journal of Public Health*, *86*:8, 1, 1082-1086.

Wyer, K. (2004). *Yoga on the Inside: New help for troubled youth.* Retrieved December 27, 2004 from http://www.yifoundation.org/news/newspc.html.

Yehuda, R. (2001). Biology of posttraumatic stress disorder. *Journal of Clinical Psychiatry*, *62*:l17, Special issue: Understanding posttraumatic stress disorder, 41-46.

Young, L. (1992). Sexual abuse and the problem of embodiment. *Child Abuse & Neglect*, *16*:1, 89-100.

# APPENDIX A

## Yoga Resources

## Audio/Video Recommendations

Gentle Yoga Practice DVDs

*A.M. and P.M. Yoga for Beginners (2002).* By Rodney Yee & Patricia Walden. Living Arts.

*Introduction to Yoga: Gentle, for Extreme Beginners (2003).* By Evamarie Pilipuf. Tree of Fitness, Inc.

*Stress Relief Yoga (2004).* By Suzanne Deason. Living Arts.

*Yoga Conditioning for Women (2002).* By Suzanne Deason. Living Arts.

*Yoga for the Rest of Us with Peggy Cappy (2002).* WGBH.

Stimulating Yoga Practice DVDs

*Bryan Kest Power Yoga Complete Collection (2004*). Warner Home Video.

*Power, Strength and Flexibility Yoga (2002).* By Rodney Yee. Living Arts.

*Power Yoga for Happiness (2003).* By Bjorn Enga & Cliff Hokanson. Vancouver Yoga.

*Yoga Shakti (2004).* By Shiva Rea. WEA

Audio Only Instruction

*Drops of Nectar: Yoga Relaxation for Rejuvenation and Healing (2003). By* Shiva Rea. Sounds True.

*The Yogi's Companion (2001).* By Lauren Peterson. White Swan.

*Yoga Sanctuary: A Guided Hatha Yoga Practice (2000).* By Shiva Rea. Sounds True.

*Yoga with Ateeka: Divine Yoga Flow (2003).* By Ateeka. Terra.

## Teacher/ Class Finder & Educational Resources

*Yoga Journal* – Bi-Monthly publication. Available on-line: www.yogajournal.com.

*Yoga International Magazine* – Monthly Publication. Available on-line: www.

www.yimag.org

www.yogafinder.com - Database of teachers and studios

www.yogateachersguide.org - Database of teachers and studios

www.yoga.com/ydc/connect/studio_search.asp - Database of teachers and

studios

www.yogajournal.com/newtoyoga/163_1.cfm - Artcile on choosing a teacher or

class

*Yoga Research and Education Center (YREC)* – Reference includes many articles on the practice, history and philosophy of yoga, links to related sites. www.yrec.org

*International Association of Yoga Therapists (IAYT)* – Professional organization of teachers, includes journal of yoga research. www.iayt.org

# APPENDIX B

## Structured Mind/Body Journaling

(To be copied and given to clients)

## ***Mind/Body Journal***

**Instructions:** When you choose to practice, check in with yourself by answering the questions in the first section. After your practice, complete the second section. You may answer on this page or in a separate journal.

### Before Practice

What is the quality of your thoughts? Positive vs. Negative?

What is the quality of your emotions? Happy vs. Sad? Anxious vs. Calm?

What is the quality of your physical body? Comfortable vs. Uncomfortable?

### After Practice

What poses were comfortable/ uncomfortable?

What parts of the body are tightest/sorest/strongest?

What was your experience of teacher/ students?

***Mind/Body Journal, Page 2***

How did you perceive your body?

When did you feel anxious?

When did you feel disconnected?

What is the quality of your thoughts now? Positive vs. Negative?

What is the quality of your emotions now? Happy vs. Sad? Anxious vs. Calm?

What is the quality of your physical body now? Comfortable vs. Uncomfortable?

What things do you want to explore with/ get support from your therapist?