

## Autoimmune Disease & Histories of Stress

Adults having functional (symptoms without apparent cellular alterations) and organic (observable cellular changes in target tissue) diseases also have childhood stressful histories. Patients with rheumatoid arthritis not only report chronically stressful adult histories (e.g. unhappy marriages or relationships, difficulties at work, or with children, etc.), but also present histories of difficulties in earlier interactions with their mothers and experiences of considerable chronic threat (Baker, 1982). In addition, rheumatoid arthritis patients report childhood histories that are characterized by emotional neglect and abuse (Walker et al., 1997a). Later adult joint swelling is associated with an increased sense of depression in response to difficulty managing interpersonal conflict as well as conflictual coping with flares (Zautra et al., 1994, 1999; Marcenaro et al., 1999). Higher stress levels in this patient population are associated with androgen-stimulated estradiol negative feedback and higher stress neurohormonal prolactin activity. Both hormones have been positively correlated with the rheumatoid arthritis patient's sense of depression (Zautra et al., 1994). With disease progression (or just prior to disease expression) patients assess and conclude that they cannot garner control over and cope with aversive interpersonal life events. This sense of "giving up" appears to underlie the chronicity of their physical illness (Zautra et al., 1999). The intensity of this sense of loss of control is also associated with the degree of disease flare reactivity to stress.

Patients with systemic lupus erythematosus present histories of marked childhood emotional deprivation (Otto & Mackay, 1967). Just prior to symptom expression, patients emit a sense of helplessness and hopelessness, "I give up", that relates to the SLE patient's inability to cope with the effects of current and prior stress (Blumenfeld, 1978).

The majority of multiple sclerosis (MS) patients, like healthy controls, tend to portray their childhood home life and themselves as moderately to very happy and also as relaxed and taking things in stride, respectively (Warren et al., 1982). Despite these similarities MS patients rated that they experience more anxiety in response to current stressors. Upon further inquiry MS patients disclose disturbing memories relating to wartime combat, an unpredictable urban attack, a major automobile accident and minor injury, raising oneself at the age of twelve years, and persistent beatings by step-father, etc (p. 829). Numerous adult stressors precede the initial onset of MS symptoms (Warren et al., 1982). Despite MS patients more positive outlook on life, psychiatric assessment has revealed that MS patients differ from healthy subjects in the insecurity that drives their need to seek greater love, their use of rigid defense mechanisms, i.e. as denial and minimization, and difficulty at resolving inner conflicts due to poor coping skills. Many of these personality characteristics date back to early childhood and correlate positively with symptom severity (Diana et al., 1985).

Chronic stress also appears to play a more obvious role in functional diseases like fibromyalgia and irritable bowel disease. Fibromyalgia (Taylor et al., 1995) is condition that is associated with different types of pain and other symptoms, e.g. headaches, stiffness, backaches, abdominal cramps, fatigue, numbness, etc. with no apparent structural abnormality in the tissue. The extent of pain is measured by tender point counts. Fibromyalgia patients report (Imbierowicz & Egle, 2003) having had very poor emotional relationships with one or both parents, particularly fathers (McBeth et al., 1999), and rated low levels of emotional security. The parents of fibromyalgia patients have also been described as being emotionally neglectful, abusive, and as of being psychologically unavailable (Walker et al., 1997b) to their children. In addition fibromyalgia patients seem to have difficulties in talking about and expressing emotional difficulties with their own parents as well as affection in the course of their roles as marital partner and parent (Imbierowicz & Egle, 2003). Fibromyalgia patients report witnessing parental violence in their families of origin (Imbierowicz & Egle, 2003), family disruption (Goldberg et al., 1999), and as having experienced physical and sexual abuse themselves (Boisset-Pioro et al., 1995) or the unwanted touch of another (Taylor et al., 1995). Childhood maltreatment is highly correlated with both psychiatric distress as well as fibromyalgia symptom severity as measured by higher tender point counts (Walker et al., 1997b; McBeth et al., 1999). A far greater percentage of women having experienced wide areas of intense pain, are those same individuals who tend to report prior childhood (and/or adult) sexual abuse (Finestone et al., 2000). Patients in this group, especially those with histories of emotional trauma (Aaron et al., 1997), tend to seek health care and report the greatest number of family physician visits and number of surgical operations (Finestone et al., 2000). In response to their stressful histories, fibromyalgia patients present symptoms of a lifetime of depression, history of

somatization, anxiety, hysteria, and psychasthenia (Ahles et al., 1984; Hudson et al., 1985; Burckhardt et al., 1993; Walker et al., 1997b) as well as deficits in emotional and social role functioning.

Irritable Bowel Syndrome (IBS) is a functional gastrointestinal disorder (with symptoms of abdominal pain, bloating, and changes in bowel patterns in the absence of cellular abnormalities) that also presents comorbidity with fibromyalgia and vice versa (Veal et al., 1991; Canataroglu et al., 2001). IBS patients also bring their chronic emotional and visceral responses to their histories of childhood (and adult if appropriate) physical and sexual abuse (Walker et al., 1995), exposure to threat (Dill et al., 1997), psychological family disruption (Lowman et al., 1987) as well as emotional and verbal abuse (Talley et al., 1995) into their current emotional and physical experience. They are more likely to present chronic depression, generalized anxiety, and symptoms of somatization (Walker et al., 1995) than patients with symptoms of inflammatory bowel disease (IBD) or ulcerative colitis. IBS patients who had endured chronic threat throughout their lives and prior to symptom expression are less likely to respond positively to treatment's effects (Bennett et al., 1998). In a group of symptomatic IBS patients, psychosocial stress was negatively correlated with recovery from post-infective symptoms. Rectal biopsy specimens showed increased chronic inflammatory cell counts when compared with remitted IBS patients despite recovery from active infection (Gwee et al., 1999). Those patients with both inflammatory bowel disease (IBD) and psychiatric diagnoses tend to present histories of adult victimization of physical and sexual abuses (Walker et al., 1996) and suffer significantly greater symptom distress than an IBD population without psychiatric diagnoses.

The literature suggests that there is some link between childhood histories of adversity, (i.e. emotional neglect, disruption, and trauma, as well as physical and sexual abuse) and adult populations having autoimmune disease. Histories of adversity elicit chronic persistent stress arousal (as the reader will see later in this web site) that have the capacity to underlie the later development of physical disease by chronically stimulating stress neurocircuitry, neurohormones, and proinflammatory cytokines. Stress induced inflammation is not easily extinguished in persistently and chronically stressful environments, especially during early childhood when the brain and central nervous system is undergoing a remarkable rate of growth. Neurohormonal mechanisms for negative feedback and anti-inflammatory immune markers to cool chronic arousal and inflammation provide strategies that only work on limited complementary inflammatory responses. The interaction of all these neurobiological components allow for the later expression of physical symptoms.

Future sections of this web site will demonstrate how chronic stress underlies the later genetic expression for psychiatric symptoms (e.g. depression, PTSD, anxiety, aggression associated with anti-social personality disorder, etc.) and organic and functional disease (e.g. rheumatoid arthritis, systemic lupus erythematosus, multiple sclerosis, chronic fatigue syndrome, polymyalgia rheumatica, as well as fibromyalgia and IBS). The later expression of adult symptoms is dependent on both one's genetic predisposition and the degree and duration of chronic stress. The intensity of the stress response is more important to an individual's neurobiological response than its nature. The interaction of both these variables will determine the nature of neuroendocrine and neuroimmune synthesis, release, and secretion to life stressors at any point in the life cycle.

## References

Ahles TA, Yunus MB, Riley SD, Bradley JM, Masi AT (1984): Psychological factors associated with primary fibromyalgia syndrome. *Arthritis Rheum*, 27(10): 1101-6.

Baker GH (1982): Life events before the onset of rheumatoid arthritis. *Psychother Psychosom*, 38(1): 173-7.

Bennett EJ, Tennant CC, Piesse C, Badcock CA, Kellow JE (1998): Level of chronic life stress predicts clinical outcome in irritable bowel syndrome. *Gut*, 43(2): 256-61.

Blumenfeld M (1978): Psychological aspects of systemic lupus erythematosus. *Prim Care*, 5(1): 15-71.

Boisset-Piolo MH, Esdaile JM, Fitzcharles MA (1995): Sexual and physical abuse in women with fibromyalgia syndrome. *Arthritis Rheum*, 38(2): 235-41.

Burckhardt CS, Clark SR, Bennett RM (1993): Fibromyalgia and quality of life: a comparative analysis. *J Rheumatol*, 20(3): 475-9.

Canataroglu A, Gumurdulu Y, Erdem A, Colakoglu S (2001): Prevalence of fibromyalgia in patients with irritable bowel syndrome. *Turk J Gastroenterol*, 12(2): 141-44.

- Diana R, Grosz A, Mancini E (1985): Personality aspects in multiple sclerosis. *Ital J Neurol Sci*, 6(4): 415-23.
- Dill B, Sibcy GA, Dill JE, Brende JO (1997): Abuse, threat, and irritable bowel syndrome: what is the connection? *Gastroenterol Nurs*, 20(6): 211-5.
- Finestone HM, Stenn P, Davis F, Stalker C, Fry R, Koumanis J (2000): Chronic pain and health care utilization in women with a history of childhood sexual abuse. *Child Abuse Negl*, 24(4): 547-56.
- Gwee KA, Leong YL, Graham C, McKendrick MW, Collins SM, Walter SJ, Underwood JE, Read NW (1999): The role of psychological and biological factors in postinfective gut dysfunction. *Gut*, 44(3): 400-6.
- Imbierowicz K & Egle UT (2003): Childhood adversities in patients with fibromyalgia and somatoform pain disorder. *Eur J Pain*, 7(2): 113-9.
- Lowman BC, Drossman DA, Cramer EM, McKee DC (1987): Recollection of childhood events in adults with irritable bowel syndrome. *J Clin Gastroenterol*, 9(3): 324-30.
- Marcenaro M, Prete C, Badini A, Sulli A, Magi E, Cutolo M (1999): Rheumatoid arthritis, personality, stress response style, and coping with illness. A preliminary survey. *Ann N Y Acad Sci*, 876: 419-25.
- McBeth J, Macfarlane GJ, Benjamin S, Morris S, Silman AJ (1999): The association between tender points, psychological distress, and adverse childhood experiences: a community-based study. *Arthritis Rheum*, 42(7): 1397-404.
- Talley NJ, Fett SL, Zinsmeister AR (1995): Self-reported abuse and gastrointestinal disease in outpatients: association with irritable bowel-type symptoms. *Am J Gastroenterol*, 90(3): 366-71.
- Veale D, Kavanagh G, Fielding JF, Fitzgerald O (1991): Primary fibromyalgia and the irritable bowel syndrome: different expressions of a common pathogenic process. *Br J Rheumatol*, 30(3): 220-2.
- Walker EA, Gelfand AN, Gelfand MD, Katon WJ (1995): Psychiatric diagnoses, sexual and physical victimization, and disability in patients with irritable bowel syndrome or inflammatory bowel disease. *Psychol Med*, 25(6): 1259-67.
- Walker EA, Gelfand MD, Gelfand AN, Creed F, Katon WJ (1996): The relationship of current psychiatric disorder to functional disability and distress in patients with inflammatory bowel disease. *Gen Hosp Psychiatry*, 18(4): 220-9
- Walker EA, Keegan D, Gardner G, Sullivan M, Katon WJ, Bernstein D (1997a): Psychosocial factors in fibromyalgia compared with rheumatoid arthritis: I. Psychiatric diagnosis and functional disability. *Psychosom Med*, 59(6): 565-71.
- Walker EA, Keegan D, Gardner G, Sullivan M, Bernstein D, Katon WJ (1997b): Psychosocial factors in fibromyalgia compared with rheumatoid arthritis: II. Sexual, physical, and emotional abuse and neglect. *Psychosom Med*, 59(6): 572-7.
- Wallace DJ (1987): The role of stress and trauma in rheumatoid arthritis and systemic lupus erythematosus. *Semin Arthritis Rheum*, 16(3): 153-7.
- Warren S, Greenhill S, Warren KG (1982): Emotional stress and the development of multiple sclerosis: case-control evidence of a relationship. *J Chronic Dis*, 35(11): 821-31.
- Zautra AJ, Burleson MH, Matt KS, Roth S, Burrows L (1994): Interspersal stress, depression, and disease activity in rheumatoid arthritis and osteoarthritis patients. *Health Psychol*, 13(2): 139-48.
- Zautra AJ, Hamilton NA, Potter P, Smith B (1999): Field research on the relationship between stress and disease activity in rheumatoid arthritis. *Ann N Y Acad Sci*, 876: 397-412.