

Adrenal Function in Chronic Fatigue Syndrome and Fibromyalgia

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Disclosures

Dr. James Wilson “declare(s) no conflicts of interest, real or apparent, and no financial interests in any company, product, or service mentioned in this program, including grants, employment, gifts, stock holdings, and honoraria.”



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Objectives:

At the completion of this activity, the participant will be able to:

1. Identify the definition of Chronic Fatigue Syndrome (CFS) and Fibromyalgia syndrome (FMS)
2. Recognize underlying hormonal patterns at play in both Chronic Fatigue and Fibromyalgia
3. State the importance of proper adrenal support in the successful treatment of both illnesses
4. Identify some of the common signs and symptoms of adrenal fatigue
5. Develop your own comprehensive treatment protocol for both illnesses

Purpose

The purpose of this presentation is to help the healthcare professional recognize and comprehensively treat adrenal fatigue as it occurs with chronic fatigue syndrome (CFS) and fibromyalgia syndrome (FMS).

Chronic Fatigue Syndrome and Fibromyalgia

Chronic Fatigue Syndrome

Chronic Fatigue Syndrome

Definition - Chronic fatigue syndrome: A debilitating and complex disorder characterized by:

- Profound fatigue of six consecutive months or longer duration, sometimes persisting for years.
 - Not improved by bed rest
 - May be worsened by physical or mental activity
- Substantially lower level of activity than capable of before the onset of illness
- Other symptoms may include muscle pain, impaired memory or mental concentration, insomnia, post exertional malaise lasting more than 24 hours.

- <https://www.cdc.gov/cfs/general/index.html> (sourced March 28, 2017)

Criteria for Case Diagnosis of CFS

To receive a diagnosis of CFS, a patient must satisfy 3 criteria:

- Have severe chronic fatigue of six months or longer duration with other known medical conditions excluded by clinical diagnosis;
- The fatigue significantly interferes with daily activities and work
- Concurrently has four or more of the following symptoms:
 - substantial impairment in short-term memory or concentration
 - sore throat
 - tender lymph nodes
 - muscle pain
 - multi-joint pain without swelling or redness
 - headaches of a new type, pattern or severity
 - un-refreshing sleep
 - post-exertional malaise lasting more than 24 hours

<https://www.cdc.gov/cfs/general/index.html>

Chronic Fatigue Syndrome cont.

- A number of illnesses have been described that have a similar spectrum of symptoms to CFS including:
 - fibromyalgia syndrome,
 - myalgic encephalomyelitis,
 - neurasthenia,
 - multiple chemical sensitivity
 - chronic mononucleosis.
- Although these illnesses may present with a primary symptom other than fatigue, chronic fatigue is commonly associated with all of them.

<http://cdc.gov/cfs/cfsbasicfacts.htm> (Sourced April 5, 2014. Page has since been removed)

Causes of Chronic Fatigue Syndrome

- "While a single cause for CFS may yet be identified, another possibility is that CFS has multiple triggers including":
 - infections
 - Immune dysfunction
 - abnormally low blood pressure that can cause fainting (neurally mediated hypotension)
 - nutritional deficiency
 - stress that activates the the HPA axis

<https://www.cdc.gov/cfs/general/index.html> (Sourced March 28, 2017)

Incidence of Chronic Fatigue Syndrome

- “Chronic fatigue syndrome (CFS) affects more than one million people in the United States.
- However, there are tens of millions of people with similar fatiguing illnesses who do not fully meet the strict research definition of CFS.”

<http://www.cdc.gov/cfs/cfsbasicfacts.htm>

<https://www.cdc.gov/cfs/general/index.html> (Sourced March 28, 2017)

Fibromyalgia

Definition of Fibromyalgia

- Fibromyalgia (also called fibrositis or fibromyositis) is a disorder of unknown etiology characterized by widespread pain, abnormal pain processing, sleep disturbances, fatigue and often psychological stress.

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Definition of Fibromyalgia

- People with fibromyalgia may also have other symptoms such as:
 - Morning stiffness
 - Tingling or numbness in hands and feet
 - Irritable bowel syndrome
 - Problems with thinking and memory (sometimes called “fibro fog”)
 - Painful menstrual periods and other pain syndromes

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Fibromyalgia

- **Pain.** The primary symptom of fibromyalgia is pain, both pain experienced in certain precise locations called *tender points* and generalized pain.

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia

History of widespread pain

Pain in 11 or more of 18 tender point sites, called *tender points* on digital palpation

- For classification purposes, patients will be said to have fibromyalgia if both of the above criteria are satisfied.
- Widespread pain must have been present for at least 3 months.
- The presence of a second clinical disorder does not exclude the diagnosis of fibromyalgia.

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia cont.

- History of widespread* pain – definition
 - Pain in the left and right sides of the body
 - Pain above and below the waist
 - In addition, axial skeletal pain (cervical spine or anterior chest or thoracic spine or low back**) must be present.
 - In this definition, shoulder and buttock pain is considered as pain for each involved side.

* widespread is when all of the pain areas are present

**low back pain is considered lower segment pain

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia cont.

- Digital palpation should be performed with an approximate force of 4 kg (9 lbs).
- For a tender spot to be considered “positive” the subject must state that the palpation was painful.
- Tender is not to be considered “painful”

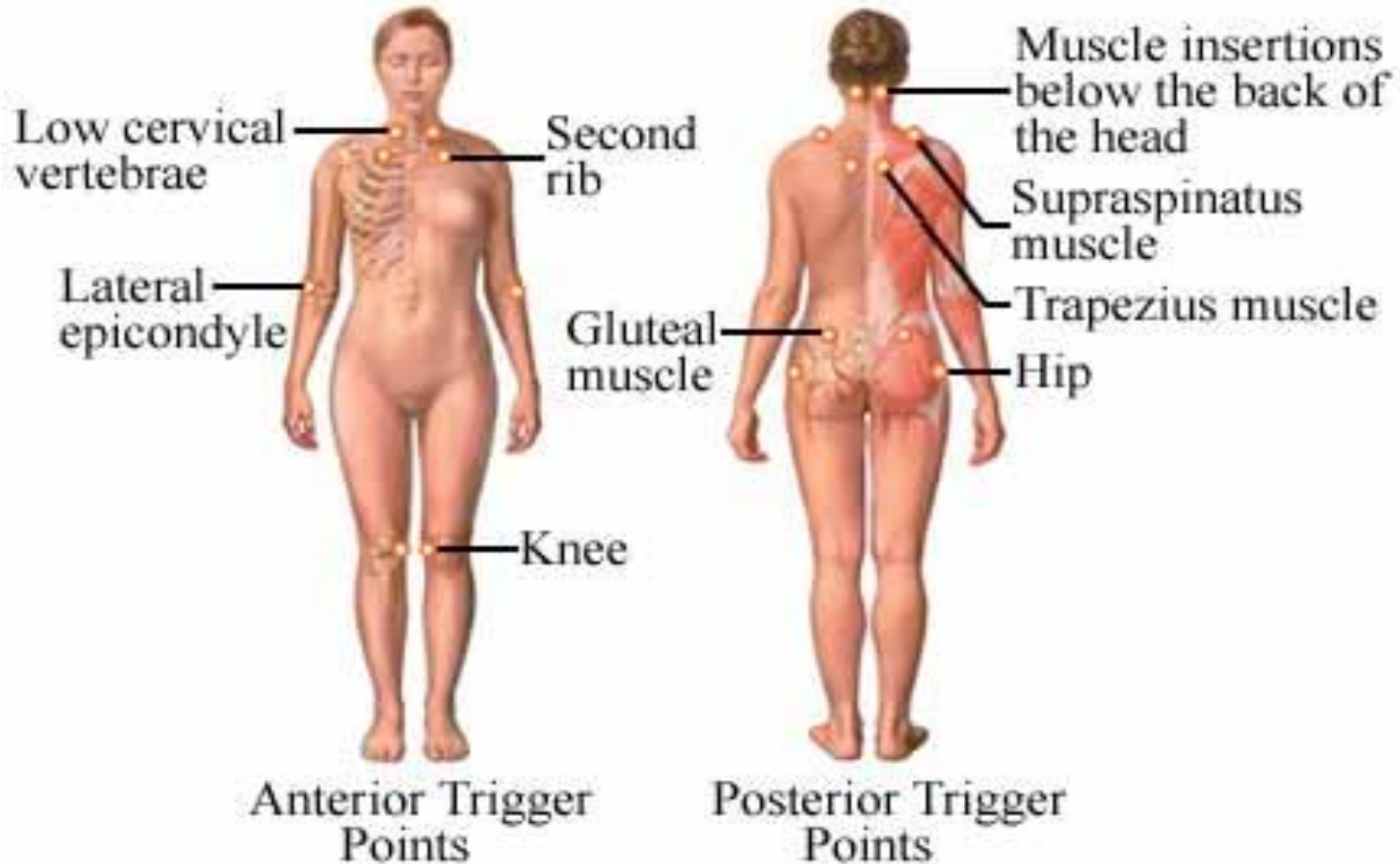
http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia cont.

- Tender points:
 - Left or right side of posterior neck directly below hairline
 - Left or right side of anterior neck above clavicle
 - Left or right side of chest, just below clavicle
 - Left or right side of upper back near where neck and shoulder join
 - Left or right side of spine in upper back between scapulae
 - Inside of arm where it bends at elbow
 - Left or right side of lower back just below waist
 - Either side of buttocks right under the hip bones
 - Either knee cap
 - Some people also experience tender points at bottom of feet.

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia cont. – Tender Points



Criteria for Diagnosis of Fibromyalgia cont.

- Widespread pain experienced in upper, lower, left and right parts of the body and in the spine that persists for at least three months.
- This pain must appear in all of the following locations:
 - Both sides of the body
 - Above and below the waist
 - Along the length of the spine

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Criteria for Diagnosis of Fibromyalgia cont.

Fibromyalgia is likely to be present if only 8 to 10 tender points are identified but the patient also has at least three other relevant symptoms, including:

- Morning stiffness
- Fatigue
- Sleep disturbance
- Numbness or tingling in the hands and feet
- Headache

http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Incidence of Fibromyalgia

- Fibromyalgia syndrome (FM or FMS) is a common chronic pain condition that affects at least 2% of the adult population in the USA (3.5 million*).
- Women = 3-10.5%**
- Men = 0.5%**

* http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

** Mease P. Fibromyalgia syndrome: review of clinical presentation, pathogenesis, outcome measures, and treatment. J Rheumatol Suppl. 2005 Aug;75:6-21.

Causes/Risk Factors - Fibromyalgia

- Causes are unknown, but some things have been loosely associated with disease onset:
 - Stressful or traumatic events, e.g. motor vehicle accidents*
 - Post traumatic stress disorders (PTSD)*
 - Repetitive injuries* or a variety of pain conditions*
 - Illnesses, e.g. viral infections*
 - Severe or prolonged stress*
 - Certain diseases (scleroderma, chronic fatigue syndrome rheumatoid arthritis)*
 - Genetic predisposition*

*http://www.cdc.gov/arthritis/data_statistics/epi_briefs/fibromyalgia.htm

Adrenal Hormone Patterns in Chronic Fatigue Syndrome and Fibromyalgia Syndrome

Low Cortisol Levels in FMS and CFS

- “Low cortisol levels have been observed in patients with different stress-related disorders such as chronic fatigue syndrome, fibromyalgia and post traumatic stress disorder.”*

*Fries, E. et.al. A new view on hypocortisolism. Psychoneuroendocrinology. 2005 Nov;30(10):1010-6.

Low Cortisol Levels in FMS and CFS cont.

- Previously stressed adrenals increase vulnerability to chronic fatigue syndrome and fibromyalgia syndrome.*

*Heim, et al. 2000.

Low Cortisol Levels in FMS and CFS

- Varying levels of adrenal fatigue occur in fibromyalgia syndrome and chronic fatigue syndrome.

Low Cortisol Levels in FMS and CFS cont.

- There is evidence of a common pattern of low cortisol in chronic fatigue syndrome and fibromyalgia syndrome.
- Hypocortisolism has been frequently reported for patients suffering from bodily disorders such as chronic fatigue and fibromyalgia.*

*Demitrack, et al. 1991. Heim et al. 1998, Psychosocial med.

Low Cortisol Levels in FMS and CFS_{cont.}

However

- Some researchers have found increased cortisol levels in patients with FMS.¹
- While others have found normal cortisol levels in FMS² and CFS.³

1. Reidal 1998

2. Scott 1999

3. Maes 1998

Low Cortisol Levels in FMS and CFS cont.

- “...The overall balance of evidence points to reduced cortisol output in at least some patients[*with CFS and FMS*], with some evidence that this is linked to symptom production or persistence.”

Italics mine

Cleare AJ. 2003

Low Cortisol Levels in FMS and CFS cont.

- CFS has been described as a form of Addison's disease.
- CFS and Addison's disease share 39 common features.
- All symptoms listed for CFS have also been reported for Addison's disease.
- "This similarity between two distinctly named diseases is probably unequalled in medical literature."*

*Baschetti. 2000

Low Cortisol Levels in FMS and CFS_{cont}

- Normally cortisol levels rise in response to increased pain, inflammation, and psychological and emotional stress factors.

However

- In CFS and FMS, cortisol levels are more likely to fall.
- As a result of this paradoxical response, it is likely that people with CFS and FMS suffer more because they have inadequate anti-inflammatory and analgesic adrenal hormones.

Is it any wonder they feel so bad?

People with CFS and FMS Often Have Lower Baseline Cortisol Levels

- Even normal cortisol levels are too low for these conditions.
- The only appropriate response to CFS or FMS is to produce an increased amount of cortisol.
- Normal or low salivary cortisol levels in FMS and CFS is a sign of low adrenal function (adrenal fatigue) and indicates a need to treat the adrenals directly.

Cortisol Amplitude and Circadian Rhythm May Also Vary in CFS and FMS

- Patients with CFS showed increased amplitudes of circadian rhythms and systolic blood pressure consistently below 100 mm Hg during the nighttime.¹ These were improved by adding Inopamil, an inotropic* drug, but not melatonin.¹
- Patients with FMS frequently show distorted circadian rhythm of cortisol.^{2,3}

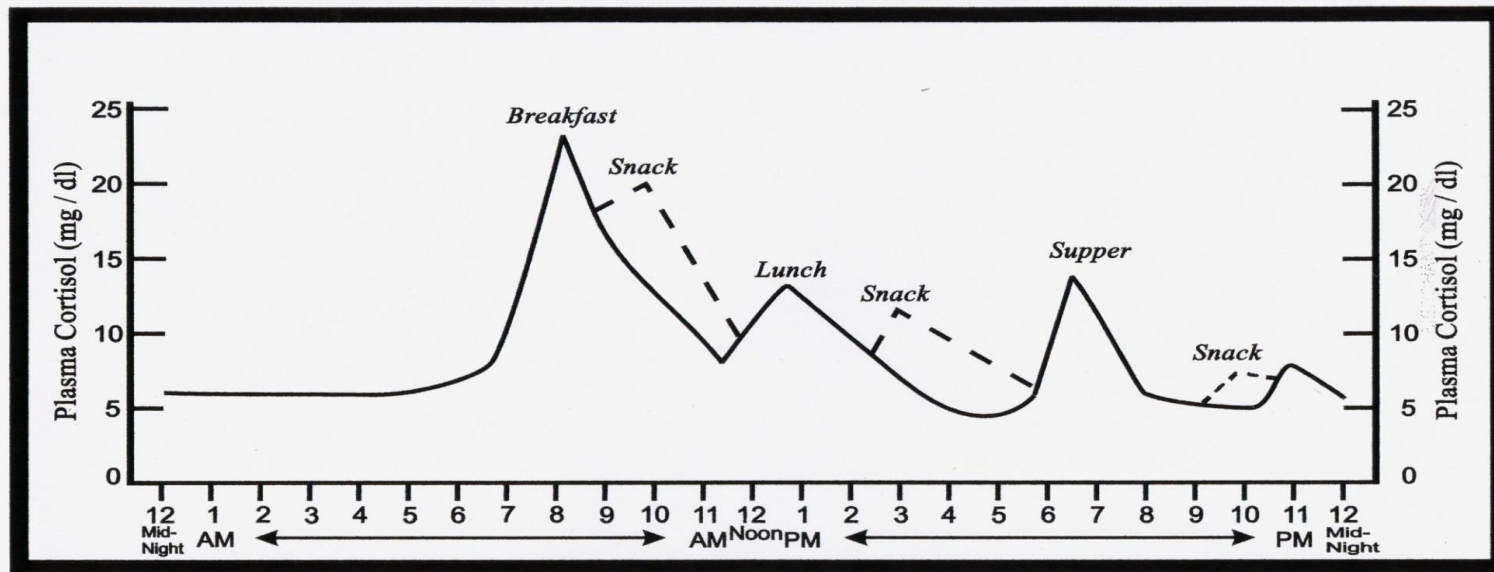
*cortisol is inotropic

2. Demitrack MA, Crofford LJ. Evidence for and pathophysiologic implications of hypothalamic-pituitary-adrenal axis dysregulation in fibromyalgia and chronic fatigue syndrome. Ann NY Acad Sci. 1998 May 1;840:684-97.

3. McCain GA & Tilbe KS Diurnal hormone variation in fibromyalgia syndrome: a comparison with rheumatoid arthritis. J. Rheum. Suppl 1989 Nov;19:154-7.

1. van de Luit L, van der Meulen J, et. al. Amplified amplitudes of circadian rhythms and nighttime hypotension in patients with chronic fatigue syndrome: improvement by inopamil but not by melatonin. Angiology; 1998 Nov;49(11):903-8. 1998 Nov;49(11):903-8. [J](#)

CIRCADIAN RHYTHM AND CORTISOL (With & Without Snacks)

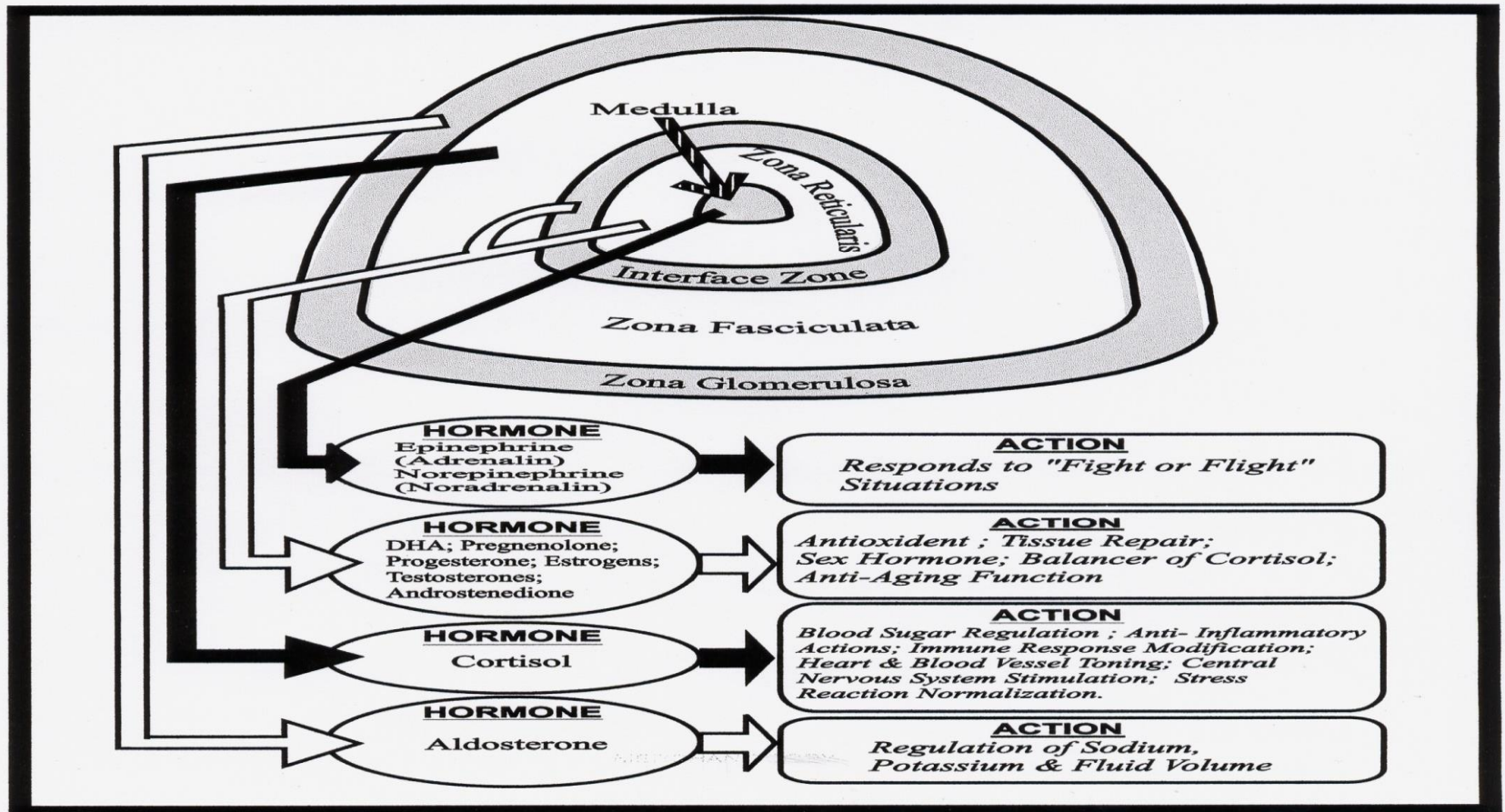


Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.

Adrenal Involvement in FMS and CFS

- FMS and CFS often involve the entire adrenal gland, both medulla and cortex.
- Primary adrenal hormones involved in FMS and CFS
 - Cortisol
 - DHEA
 - Testosterone
 - Epinephrine/Norepinephrine

HORMONES OF THE ADRENAL GLANDS AND THEIR ACTIONS



Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.

DHEAS Levels in Women with FMS

- DHEAS levels were significantly decreased in pre and post menopausal women with FMS.
- Hyposecretion of DHEAS was more pronounced in the obese.
- Low serum DHEAS levels correlated with poorer health status in patients with FMS.

Dessein PH, Shipton EA, et.al. Hyposecretion of adrenal androgens and the relation of serum adrenal steroids, serotonin and insulin-like growth factor-1 to clinical features in women with fibromyalgia. *Pain*. 1999 Nov;83(2):313-9.

DHEAS GENERAL COMMENTS

- Most studies show a decrease in DHEAS levels in the majority of people with fibromyalgia.
- Hyposecretion of DHEAS is more pronounced in the obese, and in perimenopausal and postmenopausal women.
- “Sympathetic hyperactivity may be a common denominator for low levels of DHEAS in inflammatory and non-inflammatory diseases.”*

*Kizildere S, Glück T et.al. During a corticotropin-releasing hormone test in healthy subjects, administration of a beta-adrenergic antagonist induced secretion of cortisol and dehydroepiandrosterone sulfate and inhibited secretion of ACTH. Eur J Endocrinol. 2003 Jan;148(1):45-53.

Testosterone Levels in Women with FMS

- Testosterone levels were significantly lower in premenopausal women with FMS ($p=0.0001$).
- Testosterone levels were also decreased in postmenopausal women with FMS but not statistically ($p=0.06$).
- Testosterone levels also correlated inversely to physical functioning ($p=0.02$).

Dessein PH, Shipton EA, et.al. Hyposecretion of adrenal androgens and the relation of serum adrenal steroids, serotonin and insulin-like growth factor-1 to clinical features in women with fibromyalgia. *Pain*. 1999 Nov;83(2):313-9.

Epinephrine in Women with FMS

- There was a 30% reduction in epinephrine (and ACTH) in response to induced hypoglycemia in premenopausal women with FMS, but norepinephrine was normal [*low SAME levels*].
- The epinephrine response correlated inversely with overall health status.

Alder et al. 1999

The above information indicates that the entire adrenal gland is involved in FMS and CFS and therefore must be evaluated and treated.

Adrenal Fatigue in FMS and CFS

- Adrenal dysfunction is an often overlooked component in fibromyalgia, chronic fatigue syndrome and other chronic illnesses.

However

- Adrenal fatigue is a common component in fibromyalgia and chronic fatigue syndrome.

Adrenal Fatigue in FMS and CFS cont.

- A decrease in optimal adrenal function has far reaching implications for all organs and systems.
- Decreased adrenal function in chronic fatigue syndrome (CFS), fibromyalgia (FMS) and other chronic illnesses usually leads to:
 - Prolonged or limited recovery
 - Frustrated physicians and patients

When the adrenal glands cannot keep pace with the demands placed upon them by the total amount of stress, it produces a condition known as adrenal fatigue.

Adrenal fatigue may precede the onset of chronic fatigue syndrome or fibromyalgia.

Diagnosis of Adrenal Fatigue

Diagnosis of Adrenal Fatigue

- Key items in the case history
- Key signs and symptoms
- Positive responses on the questionnaire
- Clinical tests
- Laboratory tests
- Therapeutic trial of treatment protocol

Onset of Adrenal Fatigue

- After a long period of stress or one severe stressful event (mental stress, trauma, burns, toxemia, auto accident, etc.)
- After person has driven self to exhaustion
- Overwork with little play or relaxation for extended periods
- After extended or severe respiratory infections – flu, bronchitis, pneumonia, tuberculosis

Onset of Adrenal Fatigue cont.

- Chronic lack of adequate sleep
- History of a “nervous break-down”
- Previous heavy or binge drinking or drug intake
- Intense participation in competitive sports
- After _____, I was never the same.

Onset of Adrenal Fatigue Frequently Related Clinical Entities

- Chronic coughs
- Frequent or recurring bronchitis
- Asthma, colds and other respiratory involvements
- Tendency towards chronic allergic states (skin conditions, rash, dermatitis, etc.)

Onset of Adrenal Fatigue Frequently Related Clinical Entities

- History of metabolic diseases
 - Autoimmune illnesses, e.g. rheumatoid arthritis, diabetes (AODM, type 2)
- Chronic illnesses
- Anorexia
- Lowered resistance to infectious illnesses
- Signs and symptoms increase when under stress

Commonly Reported Events in Individuals with Adrenal Fatigue

- Lost productivity at work and home
- Increased marital discord
- Decreased sex drive
- Missed promotions and opportunities at work
- Reduced income forced by need to lower stress levels
- Decreased energy reserves available to parent properly

Adrenal Fatigue Aggravating Factors

- Constant life or work stress
- Poor dietary habits
- Unhappy relationships (work/home)
- Lack of exercise
- Insufficient enjoyable activities
- No control over how time is spent

Adrenal Fatigue Relieving Factors

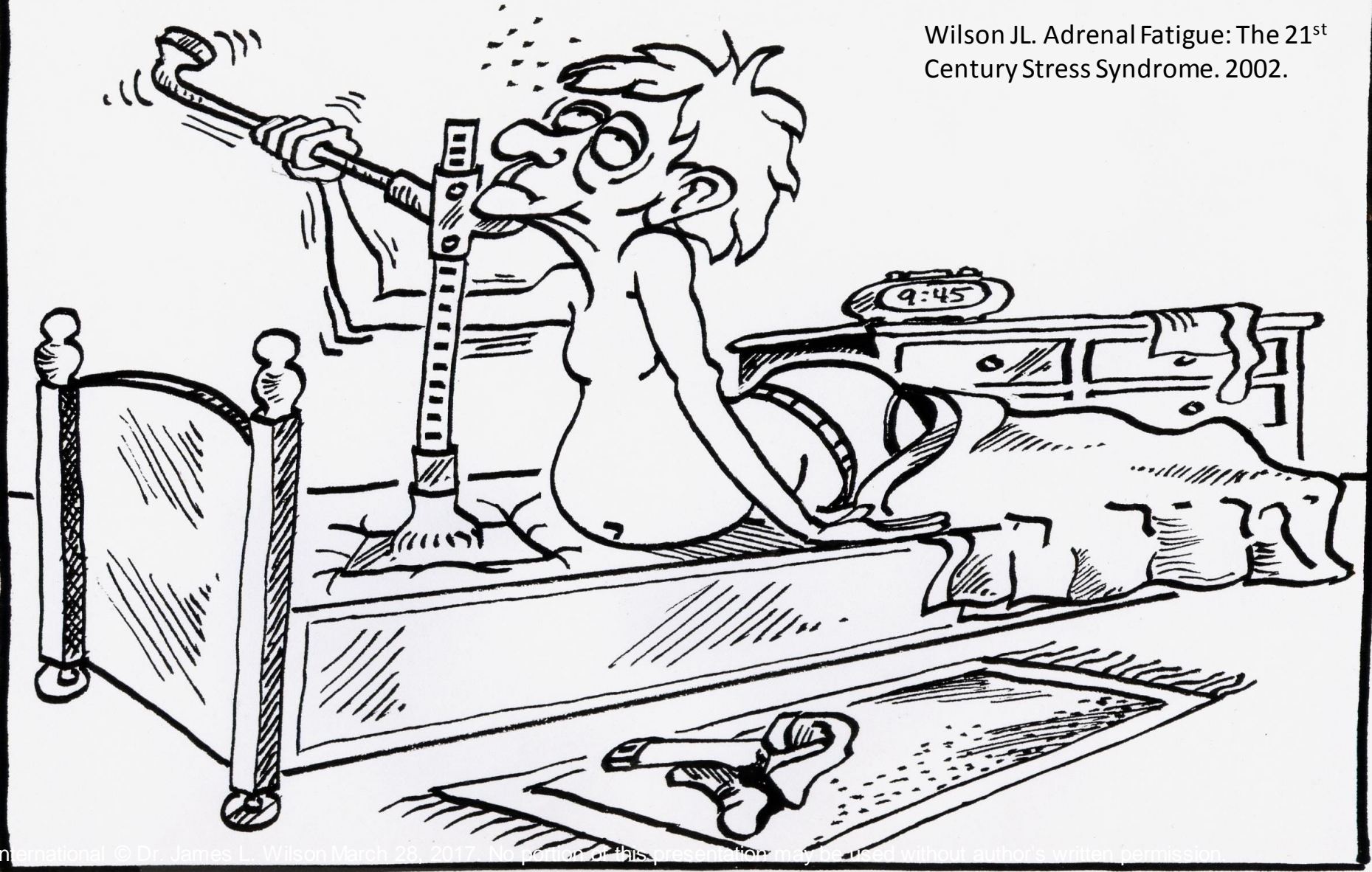
- Rest – mental, emotional and physical
- Restful sleep
- Sleeping in (until 9 AM+)
- Alleviation of stressful situation – will often have almost immediate effect
- Regular meals – decreases severity of symptoms
- Socializing – often better after spending an enjoyable evening with friends

Key Signs and Symptoms of Adrenal Fatigue

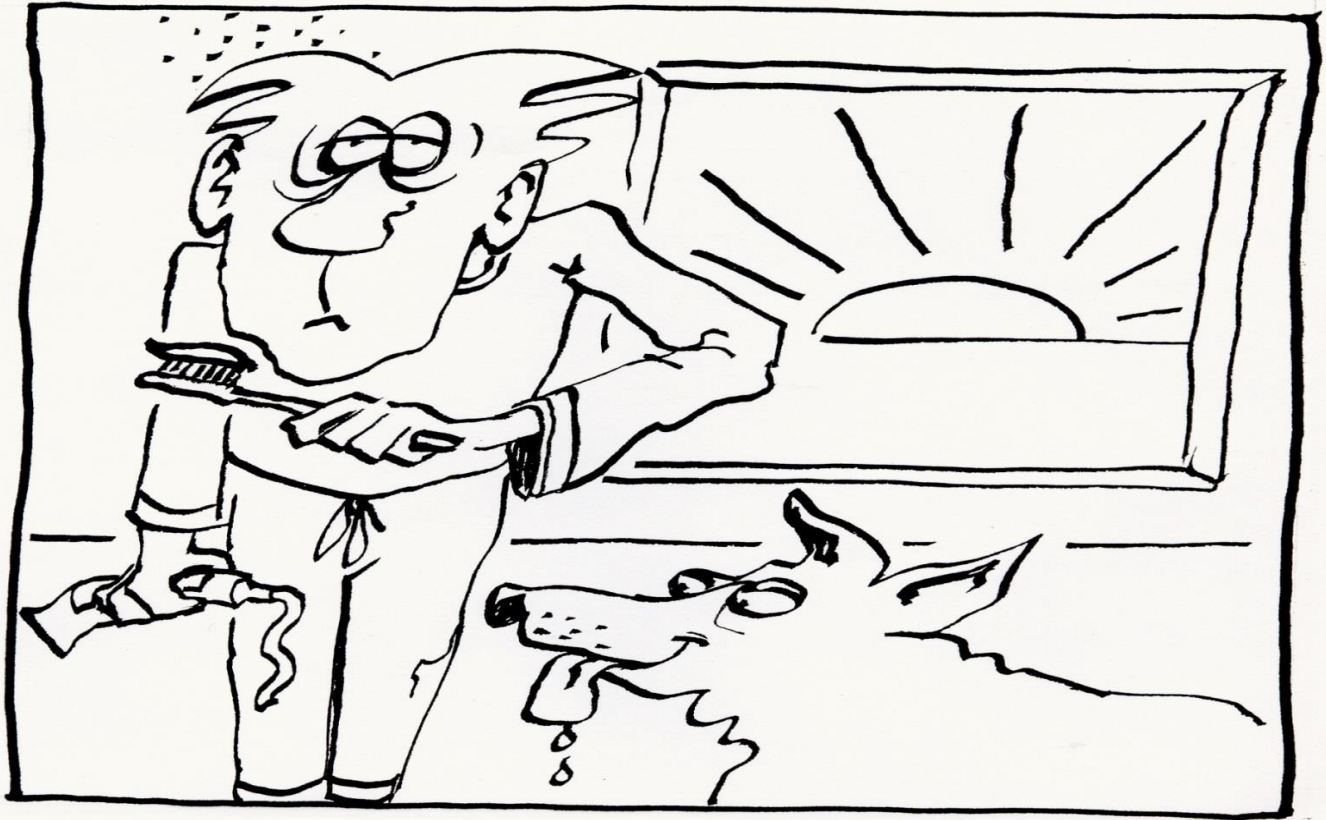
Key Signs and Symptoms of Adrenal Fatigue Energy Patterns

- Morning fatigue
 - Difficulty waking early in the morning (doesn't really wake up until approximately 10 AM)
 - Usually feels much better and fully awake after noon meal
- Afternoon low between 2-4 PM
- Usually feels best after 6 PM

Wilson JL. Adrenal Fatigue: The 21st
Century Stress Syndrome. 2002.

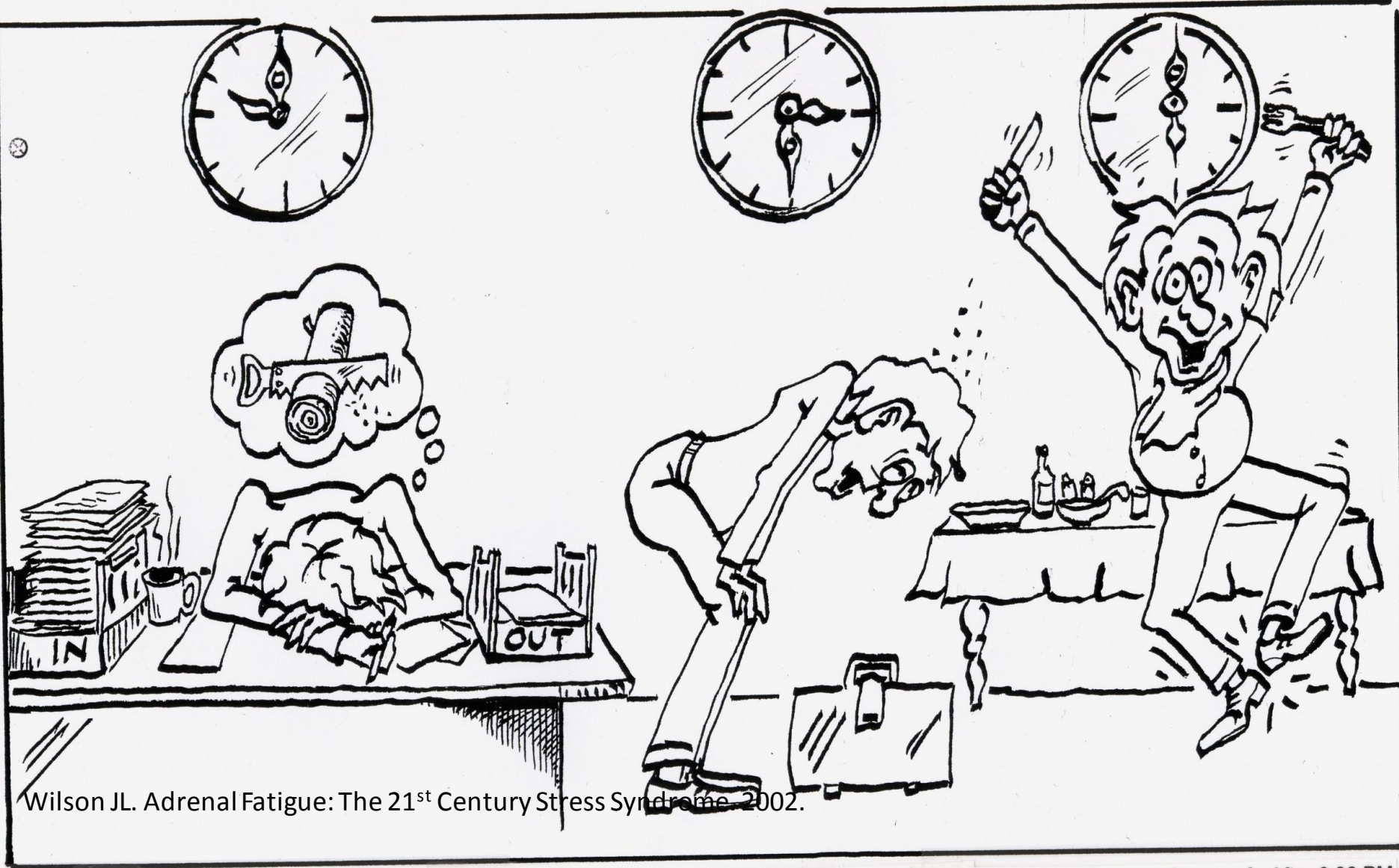


Difficulty getting up in the morning. Three alarms and you still don't feel awake enough to lift your head off the pillow.



Continuing fatigue not relieved by sleep. Despite getting a good night's sleep, you still feel tired when you wake up. Refreshed is a foreign word to people with adrenal fatigue.

Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.



Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.

Don't really wake up until 10:00 AM.

Afternoon low between 3:00 and 6:00 PM.
Around three to four in the afternoon you start to
feel like you have been drugged with sleeping pills.

Feel better after evening meal. After 6:00 PM
and supper you start to feel alive again.

Key Signs and Symptoms of Adrenal Fatigue Energy Patterns cont.

- Usually tired by 9-10 PM but often resists going to bed
- Gets a second wind between 11 PM and 1-2 AM if not asleep by 11 PM
- Wants to sleep late the next morning
- Best, most refreshing sleep is often between 7-9 AM
- Frequently does best work late at night (early AM)

Key Signs and Symptoms of Adrenal Fatigue Food Patterns

- Needs caffeinated beverages in morning to get going and often throughout the day to keep going
- Craves salt, and foods high in salt and fat
- Craves sugary foods
- Usually becomes hypoglycemic under stress
- Signs and symptoms become worse if meals are irregular or missed.



Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.

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Craving for salt or salty foods. You find yourself eating the whole bag of chips or adding extra salt to already salted foods.



Symptoms increase if meals are skipped or inadequate. You have to drive yourself with snacks, colas and coffee just to keep from collapsing.

Key Signs and Symptoms of Adrenal Fatigue Food Patterns cont.

- Usually does not handle carbohydrates well without fats or protein
- Intolerant to high potassium foods (beans, veal, molasses, bananas, dried fruit) – especially in the morning
- Drives self with food high in fat, salt and sugar, and caffeinated beverages (fast food junkie)

Key Signs and Symptoms of Adrenal Fatigue cont.

- Increased PMS, perimenopausal or menopausal symptoms
- Mild depression
- Lethargy – lack of energy
- Everything seems to take more effort
- Decreased ability to handle stress



Increased PMS. Bloated, tired, crabby, cramping and craving chocolate -- does it get any worse than this?



Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.

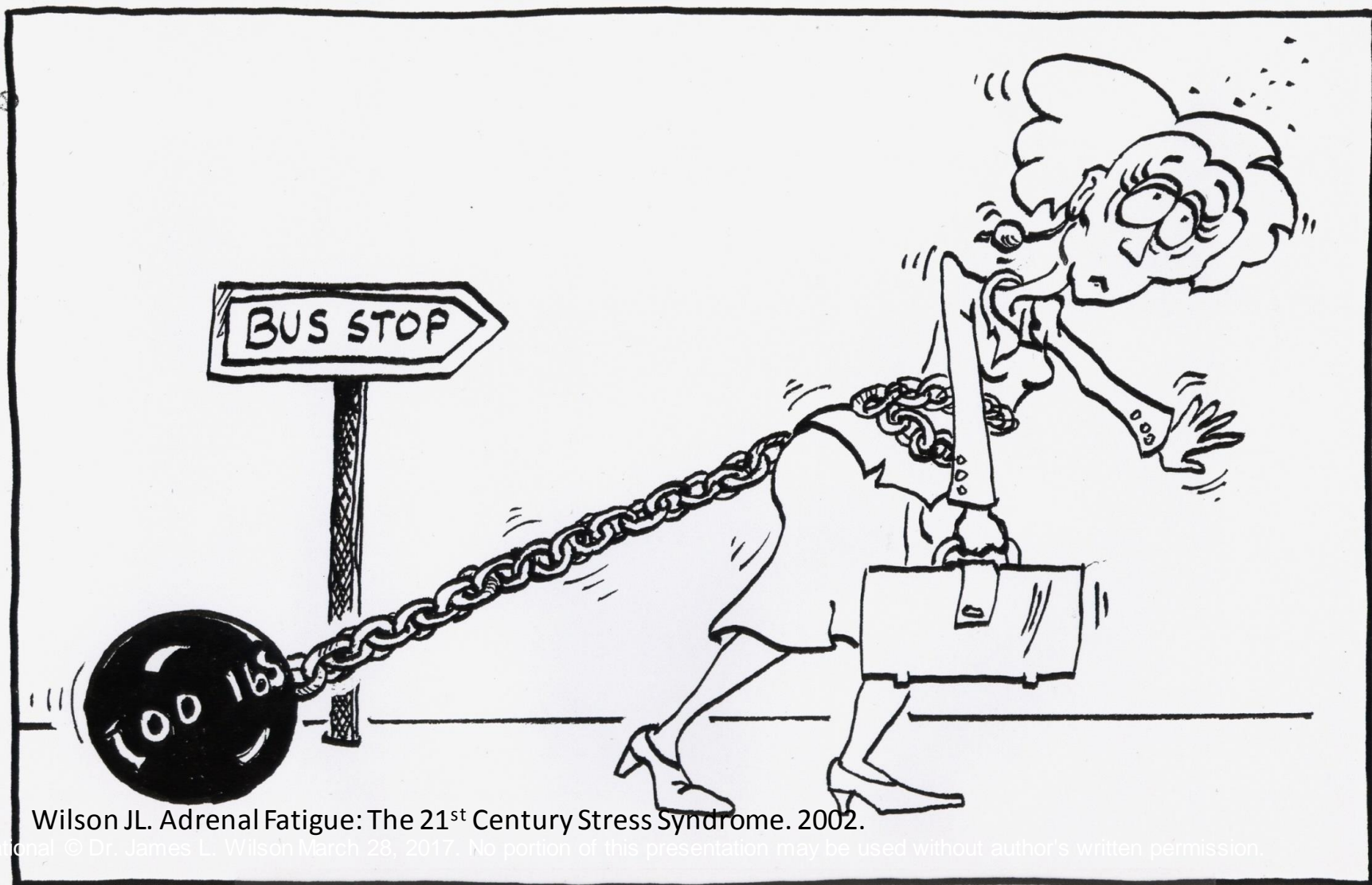
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Mild depression. Why bother making an effort, it all seems so pointless?

Wilson JL. Adrenal Fatigue: The 21st Century Stress Syndrome. 2002.



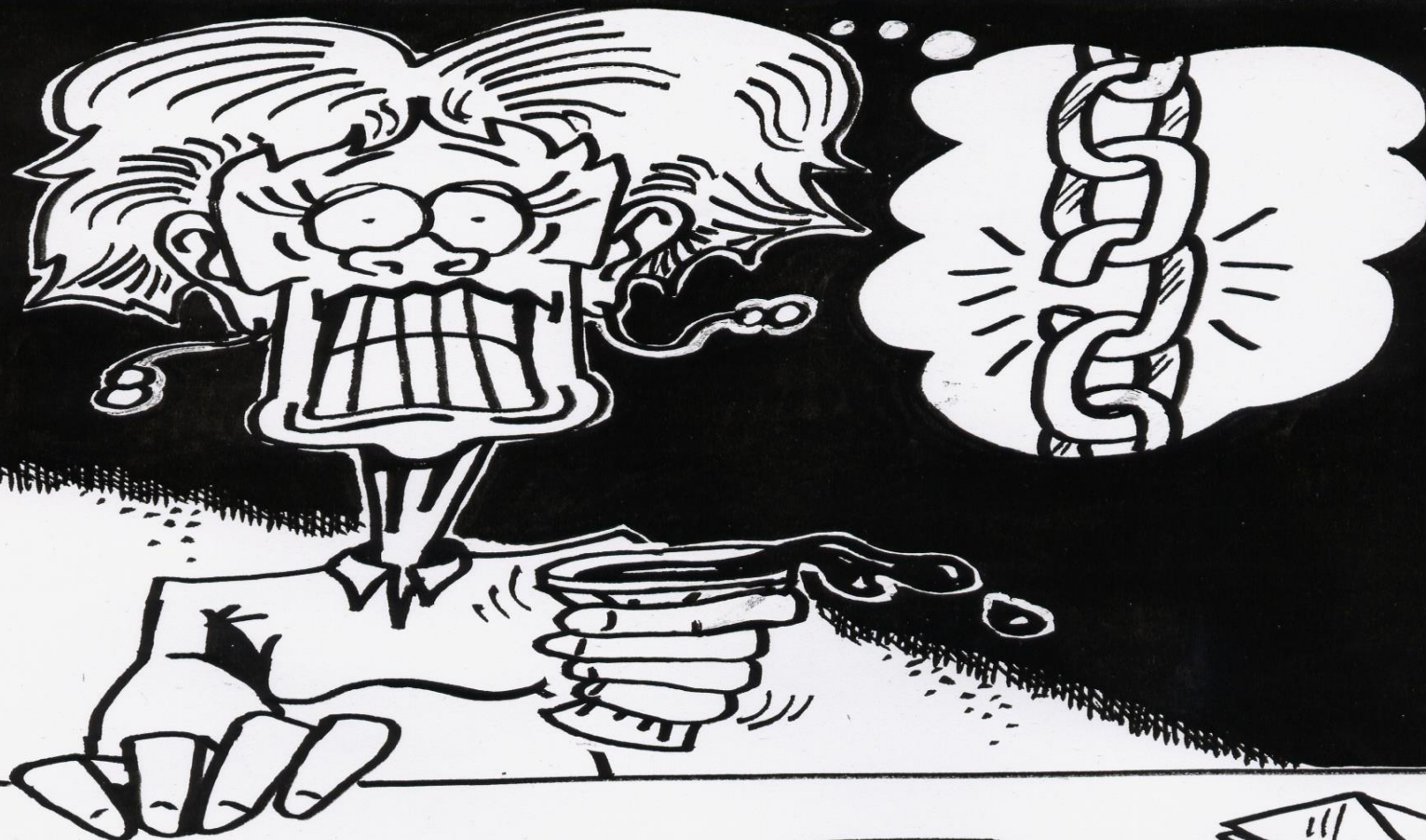
Lethargy (lack of energy). Everything seems like a chore, even the things you used to enjoy. Frequently just getting up out of the chair requires too much energy.



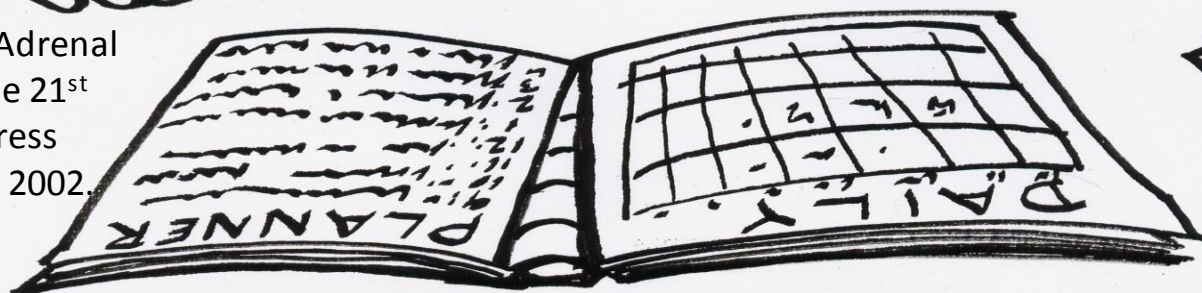
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Increased effort to do every day tasks. Everything seems to require ten times as much effort as it should.



Wilson JL. Adrenal
Fatigue: The 21st
Century Stress
Syndrome. 2002.



Decreased ability to handle stress. Little things that never used to bother you get to you. Road rage, constant anxiety, yelling at your kids, and compulsive eating, smoking or drug use let you know your adrenals are crying out for help.

Key Signs and Symptoms of Adrenal Fatigue cont.

- Needs to lie down or rest after sessions of psychological or emotional pressure/stress
- May complain of muscular weakness
- Becomes allergic or has increased frequency/severity of histamine-type allergic reactions
- Decreased sex drive
- Swollen ankles – worse in evening

Key Signs and Symptoms of Adrenal Fatigue cont.

- Syncope or lightheadedness when rising rapidly from a sitting or lying position
- Chronic fatigue
- Increased apathy or disinterest in things in general

Clinical Tests Indicating Adrenal Fatigue



Clinical Tests for Adrenal Fatigue

- ❑ Adrenal Fatigue Questionnaire (score > 44)
- ❑ Blood pressure – drops by 10 mm/hg upon rising from a lying position
- Pupil contraction – iris cannot hold contraction when light is shone across eye



Clinical Tests for Adrenal Fatigue cont.

- Sergeant's White Line – After a pressure line is drawn on the abdomen with a blunt instrument, a white line remains for several minutes, whereas it would normally turn red. (Present in 25% of people with adrenal fatigue)
- ❑ Positive Rogoff's sign – pain or tenderness over the adrenals when pressed



Laboratory Tests for Adrenal Fatigue

Laboratory Tests for Adrenal Function in CFS and FMS

- Because of the individualistic nature of chronic fatigue syndrome and fibromyalgia, laboratory tests are highly recommended.
- The tests recommended in the following slides are in addition to the usual laboratory tests for CFS and FMS.

Saliva Tests for Adrenal Function in CFS and FMS

- Adrenal Cortex – salivary adrenal hormone test
 - Salivary cortisol (sampled 4 times in a day)
 - DHEAS
 - Estrogens
 - Testosterone

Salivary Adrenal Function Test

Preferred Test for Adrenal Fatigue

- Use 1 day's collection (4 vials) taken on a patient's typical day as baseline.
- Take another sample when patient is manifesting signs and symptoms (bad day).
- Use salivary cortisol questionnaire each time saliva hormone tests are used for more accurate interpretation of test results.
- If possible, measure blood sugar at same time as cortisol levels.

Salivary Adrenal Function Test Tips

- If insufficient baseline sample is collected in one day
 - Freeze amount collected
 - Complete the sample next day, same time of day
 - Use several days if needed
- Always compare test results with signs and symptoms.

Salivary Cortisol Test False Elevations

- Can be in adrenal fatigue and still have normal cortisol levels if at the time the samples are taken the person:
 - Is under unusual stress
 - Is especially animated, excited or apprehensive
 - Has been exercising within the previous 90 minutes
 - Suffered an injury within a short time before the test
 - Is having an allergic reaction
 - Has consumed caffeine within 6 hours before the sample
 - Is taking corticosteroid or insulin

Urinary Tests for Adrenal Function in CFS and FMS

- Epinephrine and norepinephrine (dopamine – catecholamine pathway) (2nd morning catch) – adrenal medulla
 - Suspect adrenal involvement if score is out of “optimal” reference range.
 - If no optimal range is provided by lab, scores in the low or high normal are useful indicators.
 - A wide reference range and individual variability make this a difficult test to use as precise indicator of adrenal medulla function.
- Best to do all major neurotransmitters
 - Serotonin
 - GABA

Treatment of Adrenal Fatigue in Patients with Chronic Fatigue Syndrome or Fibromyalgia

A New Paradigm for the Treatment of CFS and FMS

- Both the initial cause(s) and the adrenal dysfunction must be treated in these syndromes.
 - If the root cause is addressed but the adrenals are not sufficiently strengthened, the illness may subside but the deep fatigue will remain.
 - If too much attention is paid to restoring the adrenals at the expense of addressing the cause of the illness, there will only be partial improvement.

A New Paradigm for the Treatment of CFS and FMS cont.

- Therefore, unless both the root cause and the adrenal components are recognized and adequately treated, full recovery from chronic fatigue syndrome or fibromyalgia will be more difficult and less likely.

Treatment of Adrenal Fatigue in CFS and FMS

- Treatment should be individualized and done in conjunction with regular periodic lab tests.

Treatment of Adrenal Fatigue in CFS and FMS

Lifestyle Changes

- Lie down during work breaks
 - Brief rest (15-30 minute) at 10 AM
 - and
 - Brief rest (15-30 minute) between 3-5 PM
- Exercise – avoid highly competitive events
- Early to bed 9-9:30 PM
- Sleep in (until 9 AM) whenever possible

Treatment of Adrenal Fatigue in CFS and FMS

Lifestyle Changes cont.

- n Laughter – very important to healing*
(movies, books, humorous people, etc.)
- n Actively diffuse tension and stress.*
- n Minimize stress in your life.

*= Parasympathetic enhancers (remember the adrenals have a limited parasympathetic nerve control)

Treatment of Adrenal Fatigue in CFS and FMS

Lifestyle Changes cont.

n Do not get out of bed in the morning until you think of something pleasant.*

n Daily break for enjoyment*

n Regular relaxation*

n Breathing exercises*

*= Parasympathetic enhancers (remember the adrenals have limited parasympathetic nerve control)

Treatment of Adrenal Fatigue in CFS and FMS

Lifestyle Changes cont.

- n Locate the “energy robbers” in your life.
- n Use reframing techniques to shift your mental/emotional perceptions and interpretation of – and consequently reactions to – things in your life.
- n Do relaxation response exercises regularly.
- n Expect something good daily.

Treatment of Adrenal Fatigue in CFS and FMS

Nutritional Support for the Adrenals

- Diet
 - Emphasize good quality proteins.
 - Combine good quality proteins and oils (from nuts and seeds) with unrefined carbohydrates (whole grains) at most meals.
 - Use cold pressed oils – olive, coconut, sesame, flax, etc.

Treatment of Adrenal Fatigue in CFS and FMS

Nutritional Support for the Adrenals cont.

- Avoid fruit in the morning
- Emphasize vegetables (alkaline foods)
 - 5-6 servings per day
- Allow salt to be added ad lib. according to taste
 - prefer sea salt, Celtic salt or sea salt with kelp powder
- Add salt to water
 - to taste

Treatment of Adrenal Fatigue in CFS and FMS

Nutritional Support for the Adrenals cont.

- Eat by 10 AM and again before noon
- Eat regular meals
- Anticipate hunger and eat 30 minutes before typically hungry each day.
- Chew food well – 30+ times per mouthful

Treatment of Adrenal Fatigue in CFS and FMS

Nutritional Support for the Adrenals cont.

- Avoid
 - Hydrogenated fats
 - Caffeine containing foods and beverages
 - Chocolate
 - White carbohydrates (white sugar, white flour, etc.)
 - Junk food
 - Foods to which you have an allergy or sensitivity
 - Fruit juice in which fructose, glucose, corn syrup, dextrose or sugar is one of the first three ingredients

Treatment of Adrenal Fatigue in CFS and FMS

Dietary Supplements

- Vitamin/mineral combination designed specifically to support adrenal hormone production
 - Nutrients necessary to increase adrenal hormone production and energy, and decrease overall signs and symptoms
 - B complex quantities and ratios
 - Niacin (125-150 mg/day) as inositol hexaniacinate
 - B-6 (150 mg/day) – P5P often better utilized
 - Pantothenic acid (1200-1500 mg/day)
 - Other B vitamins in well balanced ratios
 - Trace minerals in the proportions needed for the adrenal cascade

Treatment of Adrenal Fatigue in CFS and FMS

Dietary Supplements cont.

- Vitamin C
 - 2,000-5,000 mg/day – needed in large amounts to
 - increase adrenal hormone production
 - decrease inflammation and pain
 - increase tissue repair
 - 1:2 ratio of bioflavonoids to vitamin C
 - pH balanced
 - with trace minerals used in the adrenal cascade
 - sustained release
- Vitamin E with mixed tocopherols
 - 800 IU/day

Treatment of Adrenal Fatigue in CFS and FMS

Dietary Supplements cont.

- Herbal adaptogens designed to balance the hypothalamic-pituitary-adrenal (HPA) axis
 - Licorice (*Glycyrrhiza glabra*), a specific for adrenal fatigue
 - Do not exceed 1/4 lb/day to avoid increase in blood pressure (contraindicated in cases of hypertension)
 - Ashwagandha (*Withania somnifera*)
 - Maca (*Lepidium meyenii*)
 - Eleuthero (*Eleutherococcus senticosus*) – formerly known as Siberian Ginseng
- Most effective when used in combination with supplement mentioned above

Treatment of Adrenal Fatigue in CFS and FMS

Dietary Supplements cont.

- Glandular Extracts – key to adrenal recovery
 - Multiglandular (hormone free) extracts designed for HPA axis – especially adrenal support
 - The best ones contain adrenal, hypothalamus, pituitary and gonad.
 - Provides raw material for repairing damaged glands of the HPA axis.
 - 6-8 caplets/day for several months – up to 2 years
 - Most effective when used in combination with supplement mentioned above.

Treatment of Adrenal Fatigue in CFS and FMS

Dietary Supplements cont.

- Magnesium (glycinate/citrate)
 - 800 mg – 400 of which is taken at bedtime for better sleep
 - magnesium seems to be a specific for treatment of both chronic fatigue syndrome and fibromyalgia
- Organic trace minerals
 - calming effect

Specific Therapies for Adrenal Fatigue in Patients with Chronic Fatigue Syndrome or Fibromyalgia

Low or Unresponsive Adrenal Hormones in CFS and FMS

Additional Dietary Supplements

- Use the nutritional supplements already suggested for adrenal fatigue and in addition use:
 - Pregnenolone
 - Micronized and time release
 - 150 mg/day orally

Insomnia in CFS and FMS

Dietary Supplements

- Magnesium citrate – 400 mg before bed
- Herbal combination above – 20-40 drops before bed
- Topical progesterone cream – rub on wrists or temples before bed
- 5-hydroxytryptophan (5-HTP) – 50-150 mg before bed
- Melatonin – 3-5 mg before bed
- Check nighttime cortisol and blood sugar levels and make adjustments as needed.

Depression in CFS and FMS

Dietary Supplements

- The most important part of treating depression is to balance the thyroid and adrenal glands.
- In addition, the following dietary supplements are often helpful.
 - DL-phenylalanine (DLPA) – 1500 mg/day
 - depression
 - 5-hydroxytryptophan (5-HTP) – 50-150 mg/day
 - general lessening of symptoms
 - better sleep

Tissue Swelling, Pain and Inflammation in CFS and FMS Dietary Supplements

- Curcumin (anti-inflammatory) black pepper ↑ effectiveness
 - 3,000-6,000 mg/day in 1,000 mg caps
- Serrapeptase (proteolytic enzyme)
 - 1,000,000 – 2,000,000 SPU in 250,000 SPU caps taken 2 times a day away from food, once during the day and once before bed
- Porcine pancreas (proteolytic enzyme)
 - 8-12 capsules/day Anti-inflammatory herbs
- Methylsulfonylmethane (MSM) (pain)
 - 10-20 gm/day

Epi/Norepinephrine Imbalances in CFS and FMS

Dietary Supplements

- ❑ S-Adenosylmethionine (SAME)
 - 200 to 400 mg/day balances epi/norepi (key to simultaneous anxiety and depression)
- ❑ L-Theanine
 - 250 mg/3 hours
- ❑ Calcium (malate/citrate)
 - 400 mg/day
- ❑ Vitamin C sustained release complex as given for adrenal fatigue – 2 to 5 gm/day
- ❑ γ -Aminobutyric acid (Gaba)
 - 750 mg in morning and before bedtime

Other Tests and Therapies Often Helpful in CFS and FMS

- Test for vitamin D adequacy – Serum 25 OHD3
 - If deficient – vitamin D3 3,000-10,000 IU/day
- Tests for thyroid function – Hypothyroid questionnaire, basal body temperature (use chart)
 - If basal body temperature is below 97.8° F on the majority of days plus the questionnaire reveals signs and symptoms of hypothyroid
 - Do serum or finger prick thyroid tests TSH, Free T₄, Free T₃, Thyroperoxidase (TPO).
 - Use Thyroid Visualization Chart to better see TSH, FT4, FT3 relationships.

Other Tests and Therapies Often Helpful in CFS and FMS

☐ Tests for thyroid function cont.

- If thyroid tests results are not well within normal limits ($T_4:T_3$ in 4:1 ratio) and adrenal fatigue is present, treat adrenals for 2 months before beginning thyroid therapy.
- If no improvement in thyroid function is seen within 2 months, consider natural thyroid hormone prescription 1/2-2 grain/day.
- An additional 125 mcg T3 may be needed for the first month to speed response.

Adjunct Therapy for CFS and FMS

- If the onset of illness was preceded by an infection or patient has:
 - Night sweats
 - Swollen lymph nodes (either constant or intermittent)
 - Intermittent fever – especially at night
 - Abnormal WBC count
 - Other signs of infection
- The cause of their illness or at least a strong contributor is likely a subclinical infection.

Adjunct Therapy for CFS and FMS cont.

- The best adjunct therapy* for deep disseminated infection is IV treatment using:
 - Hydrogen peroxide
 - Ozone
 - UV blood treatment with one of the above

* Refer to physicians in your area who do these powerful and effective therapies.

Summary

Practical Treatment of Adrenal Fatigue in CFS and FMS

- Adrenal fatigue is common in cases of fibromyalgia (FMS) and chronic fatigue syndrome (CFS).
- The entire adrenal gland is often involved in FMS and CFS.
- Treat both the cause(s) of the illness and the adrenal component for total recovery.
- Treat each patient individually.

Adrenal Fatigue Contact Information

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