Flexi-Matrix™
Customized Test Panels

Flexi-Matrix™ offers a very economical way to create a custom test panel that meets your clinical needs. For details, login and download a Test & Fee Menu at www.diagnostechs.com or call Technical Services at 1-800-878-3787.

- The most economical way of customizing test panels and profiles to meet your clinical needs.
- Choose 3 or more individual tests from the list shown below.
- Be sure to read detailed instructions and fill out requisition form included in each collection kit.
- Always receive the lower price when your customized panel is identical to a standard panel.
- You save 20-70% volume discount off individual test fees, only when using Flexi-Test Kits.
- Be sure to read detailed instructions and fill out requisition form included in each collection kit.
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- Always receive the lower price when your customized panel is identical to a standard panel.

Note: Diagnos-Techs, Inc. also offers several standard pre-defined test panels at very reasonable fees (see Test and Fee Schedule).

ASI Adrenal Stress Index™
- Cortisol x4
- Insulin x2
- DHEA + DHEAS
- Progesterone
- Testosterone
- DHEA + DHEAS
- Adrenosterone
- Testosterone

GI Regular Gastrointestinal Health Panel™
- Blood culture for yeast
- Chymotrypsin
- Dna and parasites
- Occult Blood
- Bacterial stool pathogens
- Fecal pH
- Clostridium difficile Antigens
- Total Intestinal SigA

PostM Post Menopausal Hormone Panel™
- DHEA + DHEAS
- Testosterone
- Estrone
- Estradiol
- Estrol
- Progesterone

MHP Male Hormone Panel™
- DHEA + DHEAS
- Androsterone
- Testosterone
- Dihydrotestosterone
- Estrone
- Progesterone

New Educational Opportunities at Diagnos-Techs
Office visits, courtesy in-house seminars, online meetings… Diagnos-Techs is expanding the educational opportunities that we offer. See page 4 for more info.

Diagnos-Techs Offers Free Return Shipping
Diagnos-Techs is happy to announce Free Shipping on Returned Test Kit Boxes starting July 1, 2010 for domestic orders. See page 6 for more info.

A New Look...
As you can see, Diagnos-Techs is now sporting a new, updated logo as well as a spiced-up newsletter. We hope you like the look, and welcome your comments and feedback always.

On the Road with Diagnos-Techs
Diagnos-Techs will be exhibiting at conventions and trade shows throughout the United States. See page 4 for the latest details.
Kamal Henein, MD
William N. Kay, MD

CASE STUDY

A 36-year-old woman, with no previous medical conditions, presented with fatigue, incontinence, chronic headaches, weight gain, insomnia, muscle weakness, confusion, and mood swings. In addition, she had noticed a vague change in her energy level over the last year or so. Upon questioning, she reported that her menstrual periods have been irregular for the last 10 months.

She took Tylenol for her headaches, in addition, she is the primary caregiver to her husband’s two daughters (her step children). She confessed that she has lost her job 4 months prior. In her social life, she mentioned to her husband’s two daughters (her step children) and her mother that she has developed a new illness. She is the primary caregiver to her stepchildren’s two children and also to her husband’s two daughters (her step children). She has developed a new illness called Addison’s disease.

Socially, her overall deterioration led to the loss of her job 4 months prior. In addition, she is the primary caregiver to her husband’s two daughters (her step children). She confessed that she has lost her job 4 months prior. In her social life, she mentioned to her husband’s two daughters (her step children) and her mother that she has developed a new illness. She is the primary caregiver to her stepchildren’s two children and also to her husband’s two daughters (her step children). She has developed a new illness called Addison’s disease.

The physician caring for the patient ordered an Adrenal Stress Index Saliva Panel (ASI) in order to evaluate her free tissue cortisol exposure and circadian rhythm (see Figure 1). Because of the high cortisol results, the clinician first ruled out exogenous steroid administration (hydrocortisone creams, inhalers, use of adrenal glandular preparations) and ultimately diagnosed this patient with depression and related adrenal maladaptation. The clinician prescribed phosphatidyl serine (200mg) to be taken in the afternoon and before bed. He also discussed the option of using either hydrocortisone (5mg) each morning versus using licorice (150mg) each morning. For adrenal metabolic adaptation, he prescribed phosphorylated DHEA (230-420)

Laboratory findings include:

<table>
<thead>
<tr>
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<th>Result (Norm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>24-hour Free Cortisol</td>
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<tr>
<td>Cortisol Load</td>
<td>23-42</td>
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<tr>
<td>Cortisol Load</td>
<td>23-42</td>
</tr>
<tr>
<td>DHEA</td>
<td>7 (Normal)</td>
</tr>
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</tr>
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As a courtesy, we will submit claims to most insurance companies at our clients’ and patients’ requests. In addition, we are able to bill insurance carriers with all referring Doctors, Nurse Practitioners and Registered Nurses. Although we cannot guarantee approval on all claims, we will be able to advise you whether or not the services would be billable. Although we are a non-contracted provider with all insurance companies (with the exception of Medicare), most insurance carriers offer coverage on our services and are billable. Depending on a patient’s insurance plan, insurance companies at most times cover our tests at the maximum allowable rates allowing our patients to have no out-of-pocket expenses.

Patient Insurance Disclaimer

Diagnos-Techs, Inc. is a non-contracted provider with all insurance companies. Please verify your out-of-network benefits including out-of-network deductibles, co-insurance, and any contact your insurance carrier, Diagnos-Techs Inc. will bill your insurance at the retail price per line item which may be significantly higher than the discounted patient up-front price. If deductibles and/or co-insurances are applied, Diagnos-Techs, Inc. is obligated in the state of Washington to collect by law.

For more information:

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Shipping

Starting July 1
FREE TEST KIT RETURN SHIPPING

Effective July 1, 2010, DT will offer free return priority postage on all individually returned test kits through the US Postal Service within the US only. Overseas returns remain unchanged. New test kit boxes will have the US Post Office logo on them as well as the Diagnos-Techs logo.

IMPORTANT! To limit heat exposure, please advise your patients to deliver test kit boxes directly to your local post office.

TEST KIT BOX MAILING
Place vials, requisition form and payment (check, credit card, Medicare or insurance info) into kit box and seal.

DELIVERY TIMES
Washington State: 1-3 day
Other mainland states: 2-3 days
Alaska, Hawaii, Puerto Rico: 3-4 days

Customer Service

Business Hours
7:00am-5:00pm
Pacific Standard Time (PST)
Monday through Friday, except major holidays

Corporate Address
19110 66th Ave. S., Bldg. G
Kent, WA 98032
USA

Customer Service
p 206-878-3787 | f 425-656-2871
f 206-253-0596

Shipping
p 800-878-3787 | f 253-398-2449

Technical Services
p 800-878-3787 | f 425-251-0637

Fax Address
Sample Processing
6620 S. 92nd Place, Bldg. J-106
Kent, WA 98032
USA

Saturday Deliveries
P.O. Box 319662
Tukwila, WA 98183-9662
USA

Contact Us

Billings

Courteous Service
FROM OUR TEAM OF INSURANCE SPECIALISTS

Our dedicated team of Insurance Specialists are trained to assist you with any insurance related questions you may have. We eliminate the headache of payment processing by helping you and your patients navigate through the maze of test codes and fees.

As a courtesy, we will submit claims to most insurance companies at our clients’ and patients’ requests. In addition, we are able to bill insurance carriers with all referring Doctors, Nurse Practitioners and Registered Nurses. Although we cannot guarantee approval on all claims, we will be able to advise you whether or not the services would be billable. Although we are a non-contracted provider with all insurance companies (with the exception of Medicare), most insurance carriers offer coverage on our services and are billable. Depending on a patient’s insurance plan, insurance companies at most times cover our tests at the maximum allowable rates allowing our patients to have no out-of-pocket expenses.

Tips for Success

- Have your account number or accession number ready before you call.
- We must have at least two forms of written patient ID to name and date of birth on all vials and order forms to process samples.
- Share this newsletter with authorized staff. This information will help employees who call on your behalf.
- Review patient medication list. This will help your patients to understand what to avoid before taking our tests.
- Sign up to access results online. Call Customer Service for password, 1-800-878-3787.
- Patients should not contact the lab for drug related questions. Please advise patients to consult with you if they have any drug related questions pertaining to collection. Medical support is available for provider questions about drug interactions at 1-800-878-3787.

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Twitter.com/DiagnosTechs
New Test
Expanded Peri-Menopausal Hormone Panel (ePHP2)

The new expanded Peri-Menopausal Hormone Panel includes two saliva samples. Each sample is tested for eight hormones: Testosterone (T), DHEA & DHEAS, Estrone (E1), Estradiol (E2), Estrone (E3), Progesterone, Follicle Stimulating Hormone (FSH) and Luteinizing Hormone (LH).

Clinical Applications
- In perimenopausal women with irregular cycles
- Risk assessment of breast/ovarian proliferative diseases
- For a more definitive diagnosis of menopause in younger women
- FSH and LH values can help track severity of hot flashes, bone loss and insomnia.

First Price Change in Ten Years
As most are well aware, Diagnos-Techs has been dedicated to maintaining a very affordable pricing structure for over the past 10 years. In an effort to continue to provide high quality client support and technology as a clinical and research laboratory, we find it necessary to increase our prices starting June 1, 2010. Even with this adjustment, our panels remain competitive and more affordable when compared to alternatives in the market place. Any tests received on June 1, 2010, or thereafter, will be charged the new price. The new Test and Fee Schedule at a Glance has been mailed to you along with a letter from our corporate management. If you have not received it, please contact customer service at 1-800-878-3787.

Over-production of cortisol in response to prolonged stress results in hyporesponsiveness to the normal HPA-axis resulting in a low awakening cortisol response. (Fries, Hesse, et al. 2005)

Fear, anger and grief may precipitate myocardial ischemia and infarction. (Ther Umsch. 2003 Nov; 60 (11): 667-72)

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Persistent lack of cortisol availability in traumatized or chronically stressed individuals may promote an increased vulnerability for the development of stress-related bodily disorders. (Heim C, Ehlert U, 2000 Jan 25 (1): 1-35)

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For the next few months, the patient followed her clinician’s recommendations for exercise and diet modification. She lost 8 pounds and no longer needed Tylenol. Most importantly, in gaining some control over her own life, she began to shift her chronic stressors into a more manageable situation. This resulted in a normalized circadian output of cortisol and a return to normal of her cortisol levels.

Discussion
The relationship between stress and disease is well established, although the specific pathways are complex and multi-fac torial.

Like many patients, this patient’s clinical situation resulted from a combination of stressors that culminated in the common pathway of adrenal gland over stimulation and eventual disruption of the hypothalamic-pituitary-adrenal (HPA) axis. In other words, the various stressors of her life pathophysiologically led to over production of ACTH (adrenocorticotropic hormone) from the pituitary. This chronic over production of ACTH produced a situation where her tissues were exposed to high levels of cortisol for some length of time.

High levels of cortisol can be necessary and protective during acute stress. However, as we see in this patient, extended exposure to high levels of cortisol can have damaging effects across many organ systems, simultaneously. Cortisol’s catalytic effect on peripheral tissues and central fat deposition were responsible for aggravating the patient’s weight gain. Neurologically, high cortisol levels lead to an increase in appetite and hyperphagia. Mood swings and “irritability” are known sequelae of the psychiatric destabilization that can result from high cortisol exposure to the brain tissues.

Included in this patient’s profile, is the finding of a disrupted circadian rhythm. Not only was the cortisol output from her adrenal glands inappropriately elevated, but also continued on page 5.

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Educational Opportunities

DiagnosTechs has a strong commitment to assisting our health care professionals to restore health of their patients and promote overall wellness. Many of you have talked with one of our medical advisors on the phone when you call for medical support. In addition to telephone consultation by our in-house medical advisors, DT has recently launched the following educational programs for our clients.

COURTESY IN-HOUSE MONTHLY SEMINARS

Join us for DT’s first in-house seminar at its headquarters (Kent, WA) on Friday, June 4, 2010, 9am-3pm. Dr. William Kay (MD) will speak about The Role of Adrenal Dynamics in Functional Medicine, the same presentation Dr. Kay gave in the presence of Dr. Joseph Bellanti, a visiting professor from Georgetown University School of Medicine in April. Dr. Bellanti is Emeritus Professor of Pediatrics and Microbiology-Immunology and Director of the International Center for Interdisciplinary Studies of Immunology at Georgetown University School of Medicine in Washington DC. He has also served as president of the Society for Pediatric Research and of the American College of Allergy, Asthma & Immunology, Interasma and the Association of Medical Laboratory Immunologists.

This will be the first of DT’s new and improved continuing education program series. To reserve your seat, please call Jessica at 1-800-878-3787. Space is limited.

OFFICE VISITS WITH DR. KAMAL

Dr. Kamal, DT’s medical director, and Dr. Kay, DT’s medical advisor, are available to meet with clients in person through office visits. Both doctors will answer questions about our lab testing and discuss how physicians can further integrate our lab into their practice. For more information please call Tomomi at 1-800-878-3787 or email tomomi@diagnostechs.com.

ONLINE MEETINGS

Our medical advisors are now available for online meetings. Topics include, but are not limited to, overview of our test panels and sample report to get familiar with how and when to use each panel when caring for your patients. The online meeting also offers participants an opportunity to address specific questions that they might have. To schedule an Online Meeting, please email Tomomi at tomomi@diagnostechs.com.

continued from page 3

Signs and Symptoms of Adrenal Maladaptation

The rhythm of the secretion became blunted. This is evident by her low morning cortisol and her abnormally high 10pm to midnight cortisol level of 6 nm. Ideally, the cortisol levels should start high in the morning and decrease throughout the day. When this does not happen, the rhythmic changes in the system will adversely effect energy levels in the day and impair sleeping at night 50. The laboratory evidence of a disrupted circadian rhythm is clinically evident in this patient’s daily fatigue and difficulty in sleeping at night.

Supporting laboratory findings further corroborate cortisol disruption as a factor in this patient’s poor health. Mild hyperglycemia is a result of ongoing insulin resistance caused by chronically high cortisol levels. Continued catechol toxic effects of cortisol contribute to dyslipidemia. Her low serum potassium can be explained by cortisol having aldosterone-like effects on the renal tubules, resulting in increased sodium retention and potassium wasting.

Tension type headache is the most common and socioeconomically costly headache. With our limited knowledge of the pathophysiological mechanisms of tension-type headaches, psychological stress and weak coping mechanisms may initiate and propagate physiological pain51. It was also found that high cortisol levels were associated with increases in physical symptoms if they occurred in the context of other emotional and behavioral problems.51

Physical examination demonstrated obesity, emotional lability, hirsutism (facial hair), and acne. In addition, her diastolic blood pressure was mildly elevated. The facial hair and acne can result from inappropriate testosterone production from the adrenal cortical cells. The blood pressure effects may be secondary to the aldosterone-like effects of cortisol on salt and fluid retention. In addition, cortisol sensitizes alpha and beta catecholamine receptors within the vascular system can aggravate high blood pressure.

The treatment focused on re-establishing a normal HPA axis rhythm by adjusting the patient’s cortisol output to be higher in the morning and lower in the evening. To accomplish this end, the morning cortisol exposure was boosted by supplementing with either licorice or hydrocortisone. To decrease the midnight and nocturnal cortisol levels, phosphatidylserine was administered. The net effect of this treatment intervention demonstrated a corrected HPA circadian rhythm and normalized cortisol levels throughout the day. Symptomatically, her sleep quality improved, her mental focus returned, and her energy levels came up to the point that she could tolerate a new exercise regimen. As her various body tissues returned to a normal cortisol exposure, she was able to control her appetite, control her food intake, and lose weight.

Attention to the function of stress in patient’s illnesses can improve treatment outcomes, and prevent or delay the onset of costly targeted organ disease or the exacerbation of chronic illness. The keys to clinical success involve recognizing the clinical signs and symptoms of adrenal disruption, and pinpointing that disruption within the context of a multi-sample circadian rhythm cortisol study.

REFERENCES

1. J. Chin Endocrinol Metab. 2009 Dec; 94 (12): 4801-0
3. Health Psychol. 2008

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DISCUSSION
The relationship between stress and disease is well established, although the specific pathways are complex and multi-factorial.

Like many patients, this patient’s clinical situation resulted from a combination of stressors that culminated in the common pathway of adrenal gland over-stimulation thereafter, will be charged the new price. The new Test and Fee Schedule at a Glance has been mailed to you along with a letter from our corporate management. If you have not received it, please contact customer service at 1-800-878-3787.

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Included in this patient’s profile, is the finding of a disrupted circadian rhythm. Not only was the cortisol output from her adrenal glands inappropriately elevated, but also continued on page 5

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Kamal Henein, MD
William N. Kay, MD

CASE STUDY

A 36-year-old woman, with no previous medical conditions, presented with fatigue, irritability, chronic headaches, weight gain, insomnia, muscle weakness, confusion, and mood swings. In addition, she had noticed a vague change in her energy level over the last year or so. Upon questioning, she responded that her menstrual cycles were less frequent this past year, with more severe headaches and mood swings. She also felt she was performing poorly at work, where she was responsible for her family.

Socially, her overall deterioration led to the loss of her job 4 months prior. In addition, she is the primary caregiver to her husband’s two daughters (her husband suffers from oxygen dependant emphysema). She confessed that she has a “secret” relationship with her husband’s two daughters (her husband’s two daughters). In addition, she has a family history of diabetes mellitus.

The physician caring for the patient ordered an Adrenal Stress Index Saliva Panel (ASI) in order to evaluate her free tissue cortisol exposure and circadian rhythm (see Figure 1). Because of the high cortisol results, the clinician first ruled out exogenous steroid administration (hydrocortisone creams, inhalers, use of adrenal glandular preparations) and ultimately diagnosed this patient with depression and related adrenal maladaptation.

The clinician prescribed phosphatidylserine (200mg) to be taken in the afternoon and before bed. He also discussed the option of using either hydrocortisone (5mg) each morning versus using licorice (150mg) each morning, for adrenal metabolic disturbance.

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<td>109 mg/dL</td>
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<td>[25 mg/dL]</td>
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<td>Potassium</td>
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<td>DHEA</td>
<td>10-20 nM/L</td>
<td>Normal</td>
</tr>
<tr>
<td>DHEA/DHEA Ratio</td>
<td>1-2.5</td>
<td>Elevated</td>
</tr>
</tbody>
</table>

Cortisol Load

<table>
<thead>
<tr>
<th>Cortisol Load</th>
<th>DHEA</th>
<th>DHEA/DHEA Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>240-280 mg/dL</td>
<td>20-40 nM/L</td>
<td>1-2.5</td>
</tr>
</tbody>
</table>

Cortisol/DHEA Correlation

<table>
<thead>
<tr>
<th>Cortisol (nM)</th>
<th>DHEA (nM/L)</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>10-20</td>
<td>0.5-1</td>
</tr>
<tr>
<td>10</td>
<td>20-40</td>
<td>1.0-2</td>
</tr>
<tr>
<td>15</td>
<td>30-50</td>
<td>1.5-3</td>
</tr>
<tr>
<td>20</td>
<td>40-60</td>
<td>2.0-4</td>
</tr>
<tr>
<td>25</td>
<td>50-70</td>
<td>2.5-5</td>
</tr>
<tr>
<td>30</td>
<td>60-80</td>
<td>3.0-6</td>
</tr>
<tr>
<td>35</td>
<td>70-90</td>
<td>3.5-7</td>
</tr>
<tr>
<td>40</td>
<td>80-100</td>
<td>4.0-8</td>
</tr>
<tr>
<td>45</td>
<td>90-110</td>
<td>4.5-9</td>
</tr>
<tr>
<td>50</td>
<td>100-120</td>
<td>5.0-10</td>
</tr>
</tbody>
</table>

Patient Insurance Disclaimer

Diagnos-Techs, Inc. is a non-contracted provider with all insurance companies (with the exception of Medicare), most insurance companies offer coverage at most times cover our tests at the maximum allowable rates allowing our patients to have no out of pocket expenses.

Tips for Success

- Have your account number or accession number ready before you call.
- We must have at least two forms of payment, one of which is your insurance card. Our insurance card is your responsibility to your family.
- Please verify your out-of-network benefits prior to admission to enable our patients to have no out of pocket expenses.
- Review our medical record to find the test you are interested in.
- All patient results are available to patients.

Customer Service

- Have your account number or accession number ready before you call.
- We must have at least two forms of payment, one of which is your insurance card. Our insurance card is your responsibility to your family.
- Please verify your out-of-network benefits prior to admission to enable our patients to have no out of pocket expenses.
- Review our medical record to find the test you are interested in.
- All patient results are available to patients.
New Educational Opportunities at Diagnos-Techs

Office visits, courtesy in-house seminars, online meetings… Diagnos-Techs is expanding the educational opportunities that we offer. See page 4 for more info.

Diagnos-Techs Offers Free Return Shipping

Diagnos-Techs is happy to announce Free Shipping on Returned Test Kit Boxes starting July 1, 2010 for domestic orders. See page 6 for more info.

A New Look…

As you can see, Diagnos-Techs is now sporting a new, updated logo as well as a spiced-up newsletter. We hope you like the look, and welcome your comments and feedback always.

On the Road with Diagnos-Techs

Diagnos-Techs will be exhibiting at conventions and trade shows throughout the United States. See page 4 for the latest details.

A WORD FROM THE PRESIDENT…

Welcome to the 4th Edition of Chronobiology Letter. In this issue, we spotlight a study about Adrenal Maladaptation (see page 2) and follow a female patient who took the Adrenal Stress Index Panel (ASI). The study and following discussion reveal interesting results.

Many exciting events are taking place now and in the few months at Diagnos-Techs. We have recently begun Doctor Visits, and in June we are proud to announce Courtesy In-House Seminars. In addition, we continue to have a presence at many national tradeshows and conferences throughout the year (see page 4).

As in life, we continue to grow and change in many ways. We now have a new logo, as well as some new features in Chronobiology Letter, and a new look to the newsletter as well.

As always, Diagnos-Techs is committed to assisting you, our health care professionals, in providing quality services to your patients to restore health and vitality.

Sincerely,

Dr. Elias Ilyia
President, Diagnos-Techs, Inc.