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USE OF THE GDV IN INTERCESSORY PRAYER RESEARCH: FINDINGS AND CONSIDERATIONS

JANET HATCH DUNLAP
DunjanET@aol.com

ABSTRACT

The Gas Discharge Visualization device and technique was used as a measure of prayer effects in conjunction with three other dependent health and well-being indicators: the Profile of Mood States (POMS), the Symptom Index (SI), and the levels and ratio of dehydroepiandrosterone (DHEA) and cortisol. The GDV was the only one of these measures that accurately predicted group assignment. This reinforces the value of this assessment tool as a sensitive, objective measure of subtle changes in personal energy and condition. Other findings are presented and discussed: 1) positive and negative correlations of several GDV measures with atmospheric conditions at testing; and 2) GDV correlations with other dependent measures. The results provide additional information and considerations when using the GDV in research.

INTRODUCTION

Investigative research on the effects of prayer, conscious intention and spiritual healing has increased over the past 15 – 20 years (Benor, 1992; Braud, 1994; Levin, 1998; Targ, 1997). Consequently, the need for measures capable of detecting and measuring very subtle energy changes has become more apparent. Eddington (as cited in Friedman, 1994) referred to this concern as the need for finer "nets" (scientific measures) to "catch" and measure consciousness and its effects. The Gas Discharge Visualization (GDV) device offers a promising and important new measure in subtle energy research. Therefore this device and related techniques were utilized in a study designed to assess psycho-physical changes in participants who received intercessory prayer (IP) once a week for 12 weeks.

This article provides an overview of the prayer study, and assesses some advantages and specific considerations in using the GDV in this type of prayer research. GDV findings will be presented, including significant GDV correlations with other test measures used in the study, and GDV correlations with atmospheric testing site conditions.

DESCRIPTION OF THE PRAYER STUDY

Hypothesis. This single-blind quasi-experimental study investigated the effect of remote intercessory prayer on several indicators of psychological and physical health and well-being. GDV measures of psycho-physical condition (general health, physiological stress, and endocrine condition); two self-assessment measures of health and well-being, the Profile of Mood States (POMS), and the Symptom Index (SI); and the levels of two hormones, DHEA and cortisol, and their ratio were used to assess changes.

Methods and Procedures. Generally healthy male participants, age 35 and above, were recruited from three urban areas and screened for eligibility through phone and/or face-to-face interviews. Volunteers (n = 85) were included in the study if they met age and inclusion/exclusion health requirements of no interfering diagnoses or medications. Participants were blind to their group assignment and were randomly selected across age groups (35 – 51, and above age 51) and three locations to either an IP group receiving remote intercessory prayer (n = 42), or a control group (n = 43). A representative subsample (n = 20) was randomly chosen from age and location categories to provide saliva samples for assay of the hormone levels of DHEA and cortisol.

A pretest appointment was scheduled at a mutually convenient time and location for the participant and investigator. Recruitment and pretesting were conducted April through August, 2001. After the 12-week study interval for each participant, posttesting began in September and

ended in December, 2001. Participants completed pre- and posttest interview forms requesting information on socio-demographics (age, race), as well as intervening variables that could affect health outcomes: diagnoses, prescriptive and over-the-counter medications, supplements, smoking and exercise behavior, and personal prayer beliefs and prayer behavior for self and by others. At the pretest appointment, participants were asked to read and sign an informed consent form. The posttest interview form also included questions regarding the intervening variables of education, vocation, church affiliation, interim significant events, and participant's definition(s) of prayer.

At both pre- and posttest, participants completed two self-assessment questionnaires, the Profile of Mood States (POMS; McNair et al, 1992) and a revised version of the Symptom Index (Murphy et al. eds., 1999; Shealy, 1994), and were tested with the GDV. The sub-sample participants (n=20) were asked to provide saliva samples the following day for the baseline 24-hour Adrenocortex Stress Profile (ASP; Adrenocortex Stress, 2000). These participants were provided a kit and directions for the collection, storing, and shipping of saliva samples. All participants were asked to complete a prayer log of personal prayers for self and personal prayers by others for each of the 12 weeks.

The 12-week study interval was chosen for several reasons: 1) other studies of changes in DHEA and cortisol levels have been conducted over similar periods (Cruess et al, 1999; 2000); 2) intuitive information from a master dowser (W. Woods, personal communication, 2000) indicated this was the minimum time required for the measures to reflect changes induced by the prayer intervention; and 3) this time frame was recommended by Korotkov (personal communication, 2000).

Prayer Intervention. The intervention and independent variable was conscious intention, as external distant intercessory prayer (IP). Using a specific prayer, the investigator prayed non-locally for each IP participant, once weekly during the 12-week duration of the IP participant's study interval. The prayer focused on adjusting the DHEA and cortisol levels and their ratio to optimum levels for the individual's health and well-being. In numerous studies, chronic disease and illness have been found to be positively correlated with both suppressed levels of DHEA and cortisol and elevated levels of cortisol (Kroboth et al, 1999; Shealy, 1996; Wolkowitz et al, 1999).

The prayer intervention was scheduled to begin within the week following the participant's baseline testing date. Eleven dates were then scheduled a week apart on which the investigator prayed for the IP participant. The investigator kept a log to verify that each IP subject received the prayer intervention.

Environmental Site Considerations. Environmental conditions and/or variability in these conditions may have an adverse affect GDV testing results. One major source of environmental interference at the testing site is the presence of electro and magnetic fields from manmade and/or geopathic sources (Bachelor, 1989; Becker & Selden, 1985; Cowan & Girdlestone, 1995). Prior to the first participant's appointment each day, the investigator used informational and manual dowsing with an L-rod to determine whether or not each test site was clear of electro and magnetic interference. (American Society of Dowsers, 1974; Bird, 1993; Gordon, 1993). To control for variability resulting from the potential influence of electric and magnetic appliances in the test room (overhead lights, table lamps, electric fan), those appliances were kept in the same position and distance from the testing table and equipment at both pre and posttest.

GDV Protocols: Participants and Investigator. To insure that the GDV images provided the most accurate reflection of the individual's psycho-physical condition, participants were instructed to avoid food, strenuous exercise, tobacco, and caffeine for at least two hours, and to avoid consumption of alcoholic beverages for 24 hours prior to the appointment (Korotkov, 2002).

Just prior to GDV testing, the participant was handed a grounding device to bleed off any static electricity (Woods, personal communication, 2001). The GDV test object used in GDV calibration can be used for this process (Korotkov, 2002). While the participant was being grounded, the investigator described the image-taking process. All images were taken both with and without the plastic lens filter. The investigator cleaned the lens with alcohol and sterile cotton

pads after testing each participant.

Profile of Mood States (POMS). The POMS, a 65-item survey with a five-point, Likert-type response scale, was used to measure mood and sense of well being (McNair et al, 1992). The POMS provides a total mood disturbance (TMD) score as well as six sub-scales for affective factors: tension-anxiety, depression-dejection, anger-hostility, vigor-activity, fatigue-inertia, and confusion-bewilderment. The POMS has been used in a number of research investigations over varying time intervals (Cruess et al., 1999; Cruess et al, 2000), as well as in several GDV research studies (Bundzen, 2002; Korotkov, 2002). Instructions given to the participants were those printed at the top of the test sheet. The POMS can be either machine or hand-scored.

The Symptom Index. The Symptom Index (SI) is a 164-item check-list which has been modified from the Cornell Medical Index Health Questionnaire (CMI; Burr, 1970; Murphy et al, 1999). This SI version (Shealy, 1994) was used in this study as a change measure of total number of symptoms checked. Participants were instructed to check only their current symptoms.

The Adrenocortex Stress Profile (ASP) by Salivary Assay. Great Smokies Diagnostic Laboratory (GSDL) performed the salivary assay of DHEA and cortisol levels by radioimmunoassay (RIA) for the Adrenocortex Stress Profile (ASP). Ideally all of the participants in this prayer investigation would have been tested by salivary assay. However, due to the cost of the ASP, a representative sub-sample of participants (n = 20; 10 each from the IP and control groups) was asked to provide saliva samples for this assay. The appropriate ratio of the 8:00 a.m. DHEA/cortisol (D/C), according to normal GSDL parameters (0.10 - 0.70 nanomoliter/liter; GSDL, 2000) was used as an indicator of physical and emotional health (e.g., increased DHEA to decreased cortisol).

The statistical software package for the social sciences (SPSS, 2001) was used.

RESULTS

Statistical Analysis Summary. A number of levels of statistical analysis were performed:

1) the IP and control groups were compared on all pretest intervening and dependent variables;
2) the IP and control groups were compared on all posttest intervening and dependent variables;
3) bivariate hypothesis testing was conducted on all dependent outcome measures;
4) multivariate analysis (discriminant function analysis; DFA) was performed.

Pretest Group Comparisons. Statistical comparisons of the experimental (IP) and control groups for pretest between-group differences were performed for all categories of intervening variables and each of the four baseline measures of the dependent variables. The groups were similar on all assessed intervening variables. There were significant between-group differences on one GDV measure and on the SI scores. The IP group had a significantly lower GDV non-filtered 4L finger mean entropy value ($M = 3.02$) compared to the control group ($M = 3.12$; $t = 2.17$, $p = .03$). Since the fourth finger images, taken without filter, reflect the psycho-physical condition of endocrine system, the group difference on this measure was interpreted to mean the endocrine condition of the IP group was significantly worse than the control group at pretest.

Mean pretest SI scores for the IP group ($M = 8.42$) and control group ($M = 5.93$) were also significantly different ($t = 2.19$, $p = 0.036$). The IP group had significantly more symptoms than the control group. Since the number of symptoms was expected to decrease for the IP group SI change scores were created by subtracting posttest scores from pretest scores.

Posttest Group Comparisons. All posttest categories of intervening and interim variables were analyzed for between-group differences for socio-demographic, health and health behavior (smoking and exercise), or interim significant events and prayer log data, including belief in the power of prayer. The only significant between-group posttest differences were participants' belief in the power of prayer for others (Mann Whitney $U = 522.50$, $p = .02$) and belief in the power of prayer for self (Mann Whitney $U = 544.00$, $p = .036$). More control group participants maintained a strong belief in the power of prayer for self and others compared to the IP group participants whose beliefs weakened over time.

Bivariate Hypothesis Testing. The separate effect of the intervention on each dependent variable, the GDV measures, the POMS, the SI, and the salivary assay, was analyzed. Change scores were used as the dependent variables in analyses for the GDV measure for the non-filter condition, fourth finger of the left hand and for the SI, because of pretest between-group differences on these measures. There was no significant difference in change scores between the IP and control groups for the following GDV filter and non-filter conditions: the right and left hand area integers, the right and left ring finger area and entropy values.

The GDV stress change scores were recoded and three levels of change were created: improvement (+1), no change (0), or stress value outside of the normal (2 – 4) stress index range (-1). There was no significant difference in the proportion of the control group with improved stress scores (38.9%, n = 14) to within normal range (2 – 4) compared to the experimental group (26.3 %, n = 10), or the proportion that stayed the same (control group 5.6%, n = 2; experimental group 2.6%, n = 1). Although a larger percentage of the experimental group worsened (71.1%, n = 27), compared to the control group (55.6%, n = 20), there were still no significant between-group differences for any of the three levels of stress change.

The POMS, SI, and salivary DHEA/cortisol ratio change scores were used in the posttest bivariate analysis. There were no significant between-group differences for the experimental and control groups.

Multivariate Analysis. Since there were no significant differences between the groups at posttest for socio-demographic and health behavior (smoking and exercise) intervening variables, these variables were not included in the multivariate analysis. Due to significant between-group differences at posttest for the belief in the power of prayer for self and others, these prayer belief variables were included in the multivariate analysis because of their potentiating effect on the prayer intervention.

Discriminant function analysis (DFA) was used to predict group assignment (experimental or control) based on knowledge of the change scores for the GDV, the POMS, the SI and the intervening prayer beliefs (power of prayer by others and power of prayer for self). If intercessory prayer significantly affected the DHEA/cortisol ratio of the subsample completing the salivary assay (n = 17), then the relative weight of the GDV value for the fourth finger (ring finger) of either hand would be greater than any other variables in predicting group assignment. In the entire sample, the ring finger GDV values served as proxy measures for the DHEA/cortisol ratio, since the images of the ring fingers reflect the condition of the endocrine system.

For the DFA, data were used from the 46 study participants who had complete data on all of the variables. All variables were entered into the equation at once, regardless of the individual difference in the groups. The model was significant in predicting group assignment (Wilks' lambda = .37, $\chi^2 = 33.62$, p = .029). The model correctly classified 91% of the total sample: 100% of the control group (n = 22) and 83% of the experimental group membership (n = 20 of 24). This classification difference could be explained by the greater within-group variance among the experimental group. The top five variables in descending order of significance were: posttest belief in the power of prayer for others (p = .01), posttest belief in prayer for self (p = .02), the GDV non-filter right hand area integer change score (p = .035), the non-filter right ring finger entropy change score (p = .06), and the stress index improvement value (p = .07). Thus, the DFA found one GDV measure-–the non-filter right hand area integer--to be a significant predictor of group membership.

Other Findings.

Environmental Conditions and GDV Correlations (**Tables 1 and 2**). Atmospheric conditions (temperature, barometric pressure and humidity) of each GDV testing site were recorded at the time of the pretest and posttest to determine if there were significant correlations with any of the GDV measure values. There were no significant between-group differences at for either the pretest or posttest conditions under which the GDV measures were taken.

Temperature. Pretest temperatures ranged from 71 to 84 degrees (M = 77.13, Med. = 76.00, SD = 2.90; r = -.33, p = .002). Pretest room temperature was negatively correlated to the filtered

condition of the right hand area integer value (r = -.33, p = .002), the entropy value for the filtered images of both the left fourth finger (r = -.24, p = .026) and the right fourth finger (r = -.23, p = .036), and the filtered condition of the right fourth finger area integer (r = -.30, p = .005).

Posttest temperature ranged from 70 to 83 degrees (M = 75.99, Med. = 76.00, SD = 2.65). Posttest room temperature was significantly negatively correlated with the GDV non-filtered right fourth finger entropy value (r = -.27, p = .02).

Barometric pressure. Pretest barometric pressure ranged from 29 to 30 degrees (M = 29.37, Med. = 29.55, SD = .39). Pretest room barometric pressure was significantly negatively correlated with the following GDV measures: the filtered right hand area integer value (r = -.31, p = .004), the entropy value for the filtered images of both the left fourth finger (r = -.29, p = .008) and the filtered right fourth finger (r = -.36, p = .001), the filtered fourth finger area value (r = -.27, p = .01), and the filtered right fourth finger area value (r = -.34, p = .002).

Posttest barometric pressure ranged from 29 to 31 degrees (M = 29.51, Med. = 29.60, SD = .43). Posttest room barometric pressure was significantly negatively correlated with the filter left fourth finger entropy value (r = -.31, p = .009), filtered right fourth finger entropy value (r = -.24, p = .048), non-filtered right fourth finger entropy value (r = -.46, p = .000), filtered left fourth finger area value (r = -.34, p = .003), and the filtered right fourth finger area value (r = -.54, p = .000).

Humidity. Pretest humidity levels ranged from 70% to 83% (M = 77.26, Med. = 77.00, SD = 2.35). Pretest room barometric pressure was significantly negatively correlated with the following GDV measures: the filtered right hand area integer value (r = -.31, p = .004), the entropy value for the filtered images of both the left fourth finger (r = -.29, p = .008) and the right fourth finger (r = -.36, p = .001), the filtered fourth finger area value (r = -.27, p = .01), and the filtered right fourth finger area value (r = -.34, p = .002).

Posttest humidity levels ranged from 61% to 81% (M = 74.47, Med. = 74.00, SD = 4.27). Posttest room humidity was positively correlated with the GDV filtered right fourth finger entropy value (r = .29, p = .01) and the non-filtered right fourth finger entropy value (r = .29, p = .015).

Relationship Among Dependent Variable Measures. The investigator tested the assumption that the GDV scores were accurate proxy measures for the salivary levels of DHEA and cortisol. This would be especially true for the GDV measures of the fourth finger that represents the endocrine system. Among the subsample of participants who completed the ASP (n = 17) according to protocol, the relationship of the DHEA/cortisol ratio to the GDV, as well as the POMS and SI were analyzed using bivariate Pearson correlation coefficients.

Although several of the pretest GDV measures were significantly correlated with the SI, there was only one GDV measure with significant correlation (negative) with the POMS at pretest: the filtered 4L finger area value (r = -.28, p = .01). At posttest the GDV non-filtered 4L finger area value was negatively correlated with the POMS. There were no significant posttest GDV correlations with the SI (**Table 3).**

There were two significant relationships between the salivary DHEA change score and the GDV change scores: the filter right hand area integer (r = .498, p = .042) and the filter right fourth finger entropy value change score (r = .51, p = .035). The DHEA/cortisol ratio change score also was significantly correlated with two GDV change scores: the nonfilter right hand area integer (r = .49, p = .046) and the filter 4L finger area integer (r = -.57, p = .02). One GDV change score was significantly related to the change score for the POMS: filtered left fourth finger entropy change score value (r = .29, p = .01). There were no GDV and SI change score correlations (**Table 4**).

SUMMARY AND DISCUSSION

Discriminant function analysis (DFA) of all dependent measures showed that the GDV right hand area integer significantly predicted group membership: 100% of the control group and 83% of the experimental group. There was more within-group variability for the experimental

group compared to the control group. On the GDV stress improvement variable, proportionately more participants stayed the same or got worse over time, which is further evidence that the experimental group was less stable than the control group. In this study, the GDV appears to have been a much more sensitive measure than the POMS or the SI in detecting subtle, yet significant change from a prayer intervention.

The salivary measure of DHEA and cortisol levels was tested on a small sub-sample (n = 17) of participants. The small subsample size probably contributed to a Type II error.

It is important to note that there were several significant positive correlations for the DHEA and DHEA/cortisol values with several GDV measures of general health (area integer) and fourth finger for posttest and posttest change scores. Posttest GDV left hand area values (both with and without filter) were significantly correlated to DHEA and DHEA/cortisol values. The posttest GDV filter 4L finger entropy value, reflecting the energy condition of the endocrine system, was positively correlated with the cortisol value. The following posttest GDV change scores were positively correlated with the DHEA and DHEA/cortisol ratio: the right hand area integer (filter and non-filter), the filter right fourth finger entropy value, and both the left and right fourth finger area (no filter) change scores.

These positive correlations of the GDV measures with the DHEA and DHEA/cortisol change scores add additional evidence that the GDV is an appropriate proxy measure for these hormones. Although none of GDV left and right fourth finger measures, which reflect the condition of the endocrine system, were significant predictors of group assignment in the DFA, the non-filter right ring finger entropy change score approached significance ($p = .06$).

Room temperature and barometric pressure were negatively correlated with the fourth finger entropy value. Increases in room temperature and a rise in room barometric pressure had a negative effect on the endocrine energy condition. In contrast, pre- and posttest GDV fourth finger entropy value measures were positively correlated with humidity: as the percentage of humidity rose, the endocrine entropy condition rose. Entropy values increased in reaction to the effects of higher humidity on the individual.

Since atmospheric conditions are closely correlated with the psycho-physical condition of the individual, the investigator recommends that researchers record these conditions at the time of each GDV testing. Testing the same individuals across different times of the day could also provide useful information. Ideally, GDV testing could be done in a room where atmospheric conditions are kept constant, and the testing is done at the same time of day for each individual.

It is important to control for environmental influences that may have negative effects on the participants and/or the GDV equipment. Pilot testing is important in order for the researcher to be proficient in the GDV Camera technique and all of the procedures involved. Additionally, it is equally important to control for variability of the participant's position in relation to the testing equipment and to other electrical appliances in the room (lights, fan, computer and so forth). Testing sites need to be evaluated for the presence of electro and magnetic fields to insure that the investigator has not placed the testing equipment in a detrimental zone that can impact the participant's human energy fields and system and give an inaccurate reading of the individual's normal condition. The GDV promises to be an important research measure of the effect of electro and magnetic fields on the human organism's condition. More research needs to be done in this area.

In summary, one of the GDV measures reflected the effects of a prayer intervention which focused on optimizing levels of DHEA and cortisol. Future prayer research with a large sample tested by salivary assay as well as blood draws for DHEA and cortisol levels, in addition to use of the GDV device and technique, will provide further definitive information. The GDV promises to be an important research measure of subtle energy changes through prayer effects as well as a detector of and measure for the impact of electro and magnetic fields on the human organism.

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Table 1. Significant Correlations of Gas Discharge Visualization Test Measures and Environmental Conditions: Pretest. [a] N = 84 *p < .05 **p < .01

Pretest GDV Values [a]		**Room Temperature**	**Room Barometric Pressure**	**Room Humidity**
Lefthand area integer w/filter	Pearson Correlation	-.189	-.198	.217(*)
	Sig. (2-tailed)	.086	.072	**.048**
Righthand area integer w/filter	Pearson Correlation	-.328 (**)	-.310 (**)	.266(*)
	Sig. (2-tailed)	**.002**	**.004**	**.015**
Stress	Pearson Correlation	-.085	-.122	.250 (*)
	Sig. (2-tailed)	.442	.270	**.022**
4L entropy w/filter	Pearson Correlation	-.243 (*)	-.286 (**)	.398 (**)
	Sig. (2-tailed)	**.026**	**.008**	**.000**
4R entropy w/filter	Pearson Correlation	-.229 (*)	-.364 (**)	.273 (*)
	Sig. (2-tailed)	**.036**	**.001**	**.012**
4L area w/filter	Pearson Correlation	-.204	-.271(*)	.005
	Sig. (2-tailed)	.063	**.013**	.961
4L area no filter	Pearson Correlation	.035	.090	-.260 (*)
	Sig. (2-tailed)	.754	.414	**.017**
4R area w/filter	Pearson Correlation	-.302 (**)	-.337 (**)	.125
	Sig. (2-tailed)	**.005**	**.002**	.258
4R area no filter	Pearson Correlation	.073	.129	-.290 (**)
	Sig. (2-tailed)	.512	.241	**.007**

Table 2. Significant Correlations of Gas Discharge Visualization Test Measures and Environmental Conditions: Posttest. [a] N = 71 *p < .05 **p < .01

Posttest GDV Values [a]		Room Temperature	Room Barametric Pressure	Room Humidity
4L entropy w/filter	Pearson Correlation	-.160	-.306 (**)	.218
	Sig. (2-tailed)	.182	**.009**	.068
4L entropy no filter	Pearson Correlation	-.161	-.367(**)	.097
	Sig. (2-tailed)	.180	**.002**	.421
4R entropy w/filter	Pearson Correlation	-.113	-.235 (*)	.293 (*)
	Sig. (2-tailed)	.348	**.048**	**.013**
4R entropy no filter	Pearson Correlation	-.268 (*)	-.458 (**)	.287 (*)
	Sig. (2-tailed)	**.024**	**.000**	**.015**
4L area w/filter	Pearson Correlation	-.233	-.489 (**)	.106
	Sig. (2-tailed)	.050	**.000**	.381
4L entropy no filter	Pearson Correlation	.010	-.344 (**)	.132
	Sig. (2-tailed)	.937	**.003**	.271
4R area w/filter	Pearson Correlation	-.138	-.540 (**)	.084
	Sig. (2-tailed)	.256	**.000**	.490

Table 3. Significant Correlations of Pretest and Posttest Dependent Measures. *p < .05 **p < .01

Pretest Measures	Pearson Correlation	POMS Total Score	Symptom Index	Cortisol	DHEA	DHEA/ Cortisol Ratio
	2-tailed Sig.	N=84	N=84	N=19	N=19	N=19
Symptom Index	r	.496**		.184	-.387	-.196
	p	**.000**		.450	.101	.421
Left hand area integer no filter	r	-.173	-.301**	.020	.360	.030
	p	.114	**.005**	.934	.130	.902
Right hand area integer no filter	r	-.190	-.278**	-.092	.455	.124
	p	.082	**.010**	.708	.050	.613
GDV STRESS	r	.166	.224*	-.034	-.016	.189
	p	.128	**.041**	.891	.948	.438
4L area w/filter	r	-.279*	-.257*	.169	-.156	.016
	p	**.010**	**.018**	.490	.523	.949

Posttest Measures	Pearson Correlation	POMS Total Score	Symptom Index	Cortisol	DHEA	DHEA/ Cortisol Ratio
	2-tailed Sig.	N=74	N=74	N=17	N=17	N=17
Symptom Index	r	.640**		.162	.210	.151
	p	**.000**		.534	.419	.563
DHEA	r	-.197	.210	.391		.644
	p	.448	.419	.121		.005
Left hand area integer w/filter	r	-.180	-.085	.024	.511 *	.519*
	p	.124	.471	.926	**.036**	**.033**
Left hand area integer no filter	r	-.118	-.150	-.106	.535*	.518*
	p	.317	.201	.685	**.027**	**.033**
4L entropy w/filter	r	-.171	-.098	.638 **	.416	-.121
	p	.146	.405	**.006**	.097	.643
4L area no filter	r	-.308**	-.119	.139	.281	.001
	p	**.008**	.311	.594	.275	.998

		POMS Total Score Change	Symptom Index Change	Cortisol Change	DHEA Change	DHEA/ Cortosol Ratio Change
	Pearson Correlation					

Table 4. Posttest correlations of Dependent Measures Change Scores. *p < .05 **p < .01						
	2-tailed Sig.	N=74	N=74	N=17	N=17	N=17
Symptom Index	r	-.626 **		.279	.346	.007
	p	**.000**		.278	.174	.978
Cortisol	r	.143	.279		.154	-.602 *
	p	.585	.278		.556	**.011**
DHEA/Cortisol Ratio	r	.176	.007	-.602*	.475	
	p	.500	.978	**.011**	.054	
Right hand area integer w/ filter	r	.100	-.040	-.402	.498*	.561*
	p	.395	.735	.110	**.042**	**.019**
Right hand area integer no filter	r	.117	-.011	-.260	.424	.489*
	p	.320	.923	.313	.090	**.046**
4L entropy w/filter	r	.293 *	-.186	.073	.376	.105
	p	**.011**	.112	.781	.137	.687
4R entropy w/ filter	r	.165	-.137	.207	.514*	.059
	p	.161	.243	.425	**.035**	.822
4L area w/filter	r	-.018	-.050	.412	-.206	-.566*
	p	.879	.669	.100	.427	**.018**
4L area no filter	r	-.024	.121	.577*	.090	-.368
	p	.837	.306	**.015**	.732	.146
4R area no filter	r	-.024	.126	.687**	.192	-.268
	p	.839	.287	**.002**	.461	.298