Application of Electrophotonic Capturing (EPC) Analysis Based on Gas Discharge Visualization (GDV) Technique in Medicine: a Systematic Review

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ABSTRACT

Objectives: To evaluate the scale of implementing EPC analysis based on gas discharge visualization technique in diverse medical applications and psycho-physiology; and to find if this technique can be implemented in different applications in medicine field; and does it facilitate the procedure of making a diagnosis.

Design: Systematic review.

Methods: Database included papers published in per-review journals, proceedings of international scientific congress “Science, Information, Spirit” (2003-2007), papers from International Union of Medical and Applied Bioelectrography (IUMAB) database, proceedings of other conferences devoted to EPC or GDV, bioelectrography and biophotonics. Search restrictions were human subjects, English or Russian language, and publication date from 2003 till now. All randomized controlled trials (RCTs) were evaluated using Scottish Intercollegiate Guidelines Network (SIGN) and Jadad checklists.

Results: The search yielded 132 papers addressing 4 different fields of medical and psycho-physiological applications of EPC (GDV). Among them were 22 systematic research reports, 19 RCTs, 18 case reports or case series, and 13 cohort studies. 13 RCTs were rated “high” on the two conventional checklists.

Conclusions: (1) The software and equipment EPC/GDV-complex is a convenient and easy to use device, which allows examining patients with various pathologies and, therefore, offers a wide range of applications. (2) GDV method has already showed itself as express-method of studying state of human organism. (3) The investigations showed that the GDV-method delivers valuable diagnostic information on the functional state of patients, allows monitoring their state and constitutes a convenient and easy method for conducting preventive examinations of individuals, professional training and control in various areas of application.

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2 Aveda Co, Blain, USA
INTRODUCTION

The GDV-camera is based on well-known Kirlian effect\(^1\) and utilizes modern optics, electronics and computer processing for analyzing weak photon emission from different subjects stimulated by electromagnetic field. The first GDV camera was made in 1995. Since that time Russian company Kirlionics Technologies International (KTI) has produced hundreds of such cameras and developed new designs. In our days there are different types of devices based on gas discharge visualization technique commercially available from KTI. Today GDV-cameras are used in 63 countries of the world.

Now GDV-camera has Russian Certificate of Conformance as medical device.

Electrophotonic Capturing (EPC) term has appeared not so long ago, it describes the technique more precisely. This technique and method has become very popular in alternative medicine and other scientific applications (i.e. research of water, different materials, diverse researches in agriculture and biology, etc.)\(^2\)\(^-\)\(^8\), and simultaneously with this area of applications EPC technique has been used in traditional medicine and psycho-physiological applications. This systematic review makes an emphasis on application of EPC in traditional and alternative medicine and psycho-physiological practice.

This medical technique offers the following advantages over existing techniques:

- screening evaluation of the psychophysiological state and functional activity of an individual;
- noninvasiveness, safety and complete sterility of the technique;
- assessment of the anxiety and stress levels;
- quantitative information on the energy homeostasis level both for the organism as a whole and for individual functional systems;
- monitoring of individual’s reaction towards the influence of various treatment procedures, allopathic and homeopathic medicines, and mild informational influences;
- possibility of tracking the evolution of various processes in time and comparing structural, functional and time processes that take place in the organism;
- objectivity of the information – independence from the preferences and experience of the user;
- simplicity and convenience of the method – absence of any particular requirements to the room, the environmental conditions or the qualification of the personnel; during the investigation of an individual’s state only measurements from his/her fingers and toes have to be taken;
- clearness and interpretability of the obtained results, easy storage and processing of the data;
- relative cheapness of the equipment and the procedure itself.
In this paper we want to show that the abovementioned advantages are really considered when choosing medical technique and that GDV technique has become wide spread in alternative and traditional medicine in our days and it really facilitates the procedure of making a diagnosis.

**MATERIALS AND METHODS**

*Paper selection*

Literary search yielded 132 sources of information that had been published in per-reviewed journal articles, theses, monographs, study aids, proceedings of scientific conferences during years 2003-2008, and used the gas discharge visualization method in their medico-biological and psycho-physiological investigations.

A lot of doctors and researchers that use GDV cameras or EPC technology in their work are united by the International Union of Medical and Applied Bioelectrography (IUMAB). IUMAB organize an annual conference called “Science, Information, Spirit”. It is being held in Saint-Petersburg, Russia, since 1995. So we have used in our paper search first of all the proceedings of this conference. Also we have searched for papers related to application of EPC in medicine in proceedings of international scientific conferences such as “Measuring energy fields”, “Measuring the human energy field: State of the science” and some other sources related to the EPC (GDV) technology.

Search restrictions were human subjects, English or Russian language, and publication date from 2003 till 2008 (last five years).

From all of the papers that were found we selected only those related to medicine and psychology. Also papers were excluded if they didn’t represent original data or an analysis of original data (commentaries, editorials, or expert opinion pieces); or if they are descriptive surveys.
TABLE 1. SIGN CHECKLIST

Section 1: Internal validity

1.1 Study addresses appropriate, clearly focused question.
1.2 Treatment group assignment is randomized.
1.3 Adequate concealment method is used.
1.4 Subjects and investigators are kept “blind” about treatment allocation.
1.5 Treatment and control groups are similar at the start of the trial.
1.6 Only difference between groups is the treatment under investigation.
1.7 Outcomes are measured in a standard, valid, and reliable way.
1.8 What percentage of subjects in each treatment arm dropped out before the study was completed? (record %)
1.9 All subjects are analyzed in the groups to which they were randomly allocated (intention-to-treat analysis).
1.10 Where the study is multisite, results are comparable for all sites.

Section 2: Overall assessment

How well was the study done to minimize bias? How valid is the study? code +, n, or -. SIGN, Scottish Intercollegiate Guidelines Network.

Each item in Section 1 is to be evaluated using this criteria:

Well-covered; adequately addressed; poorly addressed; not addressed (i.e., not mentioned, or indicates that this aspect was ignored); not reported (i.e., mentioned, but insufficient detail to allow assessment); and/or not applicable.

The overall assessment uses the following ratings:

+, Strong. All or more of the criteria have been fulfilled; n, Paper is neither exceptionally strong nor exceptionally weak; -, Weak. Few or no criteria fulfilled.

Evaluation procedures

Papers were classified by the first author as follows:

- RCT: studies using random assignment to treatment group and making between-group comparisons of an intervention and a comparison treatment to evaluate efficacy. This includes studies using placebo or sham comparison groups as well as those using comparisons of different treatments.
- Systematic research report: papers that corresponds to and observes some research made for a long period of time by one group in concrete field of study.
- Cohort and case control: large observational studies examining risk factors or prognostic factors.
- Other controlled studies:
- pilot studies: small randomized or nonrandomized studies for the explicit purpose of developing protocols or feasibility, not evaluating efficacy; or studies that were defined by their authors as “pilot studies”;
- quasi-experimental: nonrandomized studies with two or more treatment groups;
- single group interventions: pre-experimental studies performed under controlled conditions;
- other small experimental studies of various designs.
- Case series: papers reporting more than 2 cases observed in clinical practice.
- Case reports: papers reporting 1-2 cases observed in clinical practice.

| Study was described as randomized. | Yes | No |
| Study was described as double-blinded. | 1 | 0 |
| Description of withdrawals and dropouts was provided. | 1 | 0 |
| Methods to generate the sequence of randomization were described and were appropriate. | 1 | 0 |
| Methods to generate the sequence of randomization were described and were inappropriate. | -1 | 0 |
| Methods of double blinding were described and were appropriate. | 1 | 0 |
| Methods of double blinding were described and were inappropriate. | -1 | 0 |

*Scoring: 0-2 = low quality; 3-5 = high quality. From Reference 10.*

**Quality rating**

The examination of the discovered data determined the range of issues to be discussed:

- search for data with scientific foundations;
- decision-making concerning the inclusion of certain data into the meta-analysis;
- description of the characteristics of the original RCTs;
- results obtained in each RCT;
- analysis of the obtained data.
All RCTs were evaluated for quality using the Scottish Intercollegiate Guidelines Network (SIGN) and Jadad checklists. SIGN checklist rates studies as high quality (+), low quality (-), or neutral (0) (Table 1). To simplify comparisons between different rating systems, we marked high quality (+) studies as capital letter “H”, neutral (0) as “M”, and low quality (-) as “L”. Three coauthors independently rated each study. Differences in opinions and rates were resolved by discussion. The Jadad scale rates studies on a scale of 0-5 (Table 2).

**FIG. 1.** Flow of citations through the retrieval and screening process.
RESULTS

The search yielded a total of 132 papers. Applying the exclusion criteria resulted in 75 papers, as detailed in Figure 1. Table 3 summarizes the literature by field of study and type of paper. There were 19 RCTs in three of four chosen study fields.

Table 4 summarizes the evaluation of the RCTs’ quality. Thirteen of them were rated high in both standard checklists.

<table>
<thead>
<tr>
<th>Field of study and reference</th>
<th>Type of paper</th>
<th>RCT</th>
<th>SRR</th>
<th>CO</th>
<th>Other$^a$</th>
<th>CS</th>
<th>CR</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total:</td>
<td></td>
<td>19</td>
<td>22</td>
<td>13</td>
<td>3</td>
<td>13</td>
<td>5</td>
<td>75</td>
</tr>
<tr>
<td>Clinical studies$^{11-42}$</td>
<td></td>
<td>10</td>
<td>11</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>Psycho-physiology$^{43-60}$</td>
<td></td>
<td>4</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Alternative medicine$^{561-78}$</td>
<td></td>
<td>5</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Research$^{79-84}$</td>
<td></td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>6</td>
</tr>
</tbody>
</table>

$^a$Includes pilot studies, quasi-experimental (nonrandomized) designs, single-group interventions and other small experimental or pre-experimental designs.

RCT, randomized controlled trial; SRR, systematic research report; CO, cohort study; CS, case series; CR, case report.

We have chosen one group of papers to show the evidence of efficiency of EPC/GDV method application in all four fields of studies, listed in Table 3. These are systematic research reports or papers. We have chosen this type of papers because they present results of systematic research studies of some group of scientists in one exact medical case, studies that are being carried out for a long period of time, and at the present moment are the most serious, professional and describe science-based experiments.

Tables 5-8 gives the summary of these systematic research reports with number of patients involved in each study.
TABLE 4. EVALUATION OF RCTs

<table>
<thead>
<tr>
<th>Citation</th>
<th>SIGN</th>
<th>Jadad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandrova 2003</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Alexandrova 2003</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Bell 2003</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Bulanova 2006</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Bykov 2006</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Gagua 2004</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Gagua 2006</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Gedevanishvili 2004</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Gimbut 2004</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Lovygina 2005</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Mamedov 2006</td>
<td>M</td>
<td>H</td>
</tr>
<tr>
<td>Olalde 2007</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Priyatkin 2006</td>
<td>M</td>
<td>L</td>
</tr>
<tr>
<td>Roberts 2004</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Senkin 2004</td>
<td>H</td>
<td>L</td>
</tr>
<tr>
<td>Senkin 2006</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Tumanova 2007</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Tumanova 2007</td>
<td>H</td>
<td>H</td>
</tr>
<tr>
<td>Vepkhvadze 2003</td>
<td>M</td>
<td>H</td>
</tr>
</tbody>
</table>

RCT, randomized controlled trial; SIGN, Scottish Intercollegiate Guidelines Network.

aH = high quality; M = medium/neutral quality; L = low quality.

Clinical studies

Considering results of all listed below studies we can make a conclusion that GDV method or EPC technique can be used in diverse applications in traditional medicine, i.e. preventive assessment of allergic reaction risk, investigation of infectious pathologies, detecting different pathologic processes, anaesthesiology and reanimatology, assessment of hirudotherapy effect, monitoring functional state of patients in postoperative period and others. GDV method showed that it can be implemented like an express-method for assessment of treatment procedure effectiveness.
<table>
<thead>
<tr>
<th>Citation</th>
<th>Number of patients</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandrova</td>
<td>43</td>
<td>There are two risk factors of hypersensitivity to cosmetic substances with phyto-components: high level of anxiety index and low values of integral square coefficient of bioelectrogram (GDV-gram). Patients with such initial changes in static bioelectrogram are advised to make dynamic GDV-gram measurements during the contact with cosmetic substance under investigation in test tube for preventive assessment of development of allergic reaction risk (by reason of applying preparation).</td>
</tr>
<tr>
<td>Bolehan</td>
<td>30</td>
<td>Acquired results of comparison between serum GDV parameters of patients and clinical-laboratory data from medical reports shows that there is correlation and some dependence between them. These results can be used in further finding of GDV method implementations in investigation of infectious pathologies.</td>
</tr>
<tr>
<td>Gimbut</td>
<td>20</td>
<td>Rising tendency of imbalance factor of uterus sector in the GDV-gram of the right hand in the first phase of the cycle is reflected on the state of conjugated acupuncture points and zones, which can be registered by the means of GDV. Small sample size didn’t allow us to find essential connection between lateral behavior phenotype and imbalance factor parameters.</td>
</tr>
<tr>
<td>Kolkin</td>
<td>107</td>
<td>The revealed deviations of GDV-grams of the fingers during some pathologic processes do not always correspond to the borders of the sectors tentatively projected to a certain organs or systems and quite often outstep these sectors. As far as post operative period increased, the majority of patients demonstrated disappearance of pathologic marks and restoration of integrity and saturation of energy field pattern.</td>
</tr>
<tr>
<td>Korotkov</td>
<td>96</td>
<td>There are reliable differences between parameters of GDV-grams of practically healthy people and patients with chronic abdominal surgical pathology. GDV parameters are connected with the functional status of the organism and reflect the severity of the somatic state of patients with abdominal surgical pathology. The parameters of GDV-grams reliably change in response to the operative trauma, and their dynamics depend on the severity of the somatic state of patient, which allows using the technique for functional monitoring of patients in postoperative period, as well as for the assessment of the operative stress. The GDV technique is mostly advisable for the dynamic assessment of the functional state of patient in perioperative period. Not all the fingers shall be used, at that,</td>
</tr>
</tbody>
</table>
but only one finger of each hand. For example, the fourth finger, where the GDV changes are the most significant.

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krashenuk</td>
<td>2006</td>
<td>21</td>
<td>Systematic action of hirudotherapy harmonizes functioning of regulative processes of autonomic nervous system. Therapeutic effects of hirudotherapy were clearly confirmed for many times by the use of monitoring and GDV signals analysis, and also confirmed by nonlinear, fractal and specific analysis of HRV.</td>
</tr>
<tr>
<td>Kupeev</td>
<td>2006</td>
<td>1</td>
<td>GDV method can be used as express-method for assessment of treatment procedure effectiveness and persistency of acquired positive changes in organism. GDV technique is quite sensitive and can detect changes in a few minutes.</td>
</tr>
<tr>
<td>Polushin</td>
<td>2003</td>
<td>131</td>
<td>GDV technique is a perspective method for anaesthesiology and reanimatology. The GDV can be applied for the assessment of functional status of patient in perioperative period, as well as for the determination of adequacy of response of organism to a surgical trauma. A possibility of using GDV technique for the prognosis of development of complications in early postoperative period was shown by the example of acute postoperative pancreatitis. The disclosed dependence of GDV-gram parameters on the age indicates that the norm range for GDV-gram parameters for different age categories shall be determined.</td>
</tr>
<tr>
<td>Polushin</td>
<td>2004</td>
<td>150</td>
<td>The decrease of GDV-gram parameters of patients with the most severe somatic state is conditioned by low functional reserves of their organism. The parameters of “dynamic” gas discharge images correlate with the assessment of anxiety by the scale of Spilberg-Hanin, which enables to use the GDV technique for objective assessment of the level of anxiety of patients before surgical operations. The GDV technique enables to monitor functional state of patients in postoperative period. The GDV is a perspective technique for anesthesiology and reanimatology for functional examination of patients and monitoring of their state in perioperative period.</td>
</tr>
<tr>
<td>Polushin</td>
<td>2004</td>
<td>96</td>
<td>GDV parameters demonstrated pronounced dynamics with age in the majority of cases. The most significant changes in bioenergy homeostasis take place in an early postoperative period (within the first day). A reliable increase of all GDV-gram parameters in comparison with the initial level was disclosed (the day before operation). Most of the GDV parameters restored within 2-3 days, and some – within 3-4 days for patients who had undergone extensive surgeries.</td>
</tr>
<tr>
<td>Strukov</td>
<td>94</td>
<td></td>
<td>Dependence between GDV-gram parameters and type of surgical</td>
</tr>
</tbody>
</table>
intervention, sex and age of examined patients. Developed informational parameters of GDV-grams allows to proceed to production of software packages that will carry out automatic express-evaluation of patients’ functional state during pre- and post-operational periods.

SRR, systematic research report; GDV, gas discharge visualization; HRV, heart rate variability.

Psycho-physiology

Results in psycho-physiological field of study shows many different significant correlations between psycho-physiological parameters and parameters of GDV-grams, i.e. processes in autonomic nervous system, anxiety, neuroticism, functional reserve capacity, emotional and nervous excitation. This results show that GDV method is very useful and quick (express) technique for evaluating emotional and physical conditions of human being.

<table>
<thead>
<tr>
<th>Citation</th>
<th>Number of patients</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bundzen</td>
<td>39 (age16)</td>
<td>Basic and integral parameters of optoelectronic emission correlates with humoral-metabolic and reflex regulations processes on the level of vegetative nervous system. Increase in activity of central (neurohumoral) part of autoregulative mechanisms corresponds with power increase of optoelectronic emission processes, increase of stress tolerance parameters, and overall functional index, and corresponds with decrease in index of energetic deficiency.</td>
</tr>
<tr>
<td>Dobson</td>
<td>75 (age 35)</td>
<td>Significant relationships between GDV parameters and State anxiety and less significant relationships with Trait anxiety and Neuroticism. Significant relationships are also found for the personality dimensions of Openness and Agreeableness.</td>
</tr>
<tr>
<td>Gursky</td>
<td>328</td>
<td>Strong correlation between the GDV parameters and the diagnostic parameter measuring functional reserve capacity of a patient. This correlation has been revealed at its largest value at the filter values of the GDV parameters at the left hand. Parameter “Number of fragments” shows large difference between ill and healthy patients at 6 of 10 fingers in the skin disease group.</td>
</tr>
<tr>
<td>Korotkova</td>
<td>275 (ages)</td>
<td>GDV bioelectrography method allows carrying out screening-examination of sportsmen and their level of preparedness between the competitions.</td>
</tr>
</tbody>
</table>
16.5-26.3, GDV-grams patterns of right and left hands correlates with parameters of psycho-emotional state and psycho-physiological readiness to sport competitions. EPC technique allows authentically characterize energetic state of sportsman in moment of examination.

Mamedov 2005<sup>44</sup> Changes in organs and systems of a man registered by GDV method in 60-90% of cases coincide with ones registered by traditional diagnosis methods, and don’t contradict with the results obtained by other researchers. Pathology detected by the means of GDV technique in 60-70% of cases was confirmed afterwards by traditional methods.

O’Keeffe 2006<sup>60</sup> Too high level of GDV-entropy might result in mental disorders, schizophrenia, etc. If the level of GDV-entropy is alarmingly low, the opposite applies; it points to the fact that this individual may be “running out of options” and he is in danger of “burning out”.

Sergeev 2004<sup>45</sup> Monitoring of the condition which have been carried out by GDV method, testifies general improvement of an emotional condition, removal of emotional and nervous excitation and tension during short-term rehabilitations procedures.

**TABLE 7. SUMMARY OF SRRs IN ALTERNATIVE MEDICINE FIELD OF STUDY**

<table>
<thead>
<tr>
<th>Citation</th>
<th>Number of patients</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voeikov</td>
<td>15</td>
<td>Suggested complex of diagnosis criteria of applied diagnostic approaches allow to evaluate organisms’ response to therapy and adequacy of using different therapeutic influences. Using of GDV method in addition to other diagnostic approaches substantially simplifies (speed up) achievement of goal – creating an individual rehabilitation program and preventive recommendations.</td>
</tr>
<tr>
<td>Volkov</td>
<td>177</td>
<td>The classification of the new patients by using the model coincided with the</td>
</tr>
</tbody>
</table>

**Alternative medicine**

In alternative medicine GDV technique can be used as express-method for evaluating of impact from different treatment procedures. Some correlations were found during these researches between GDV parameters and patients state after treatment procedures.
actual classification with the accuracy of 80%. Most information about the diseases (in their experiment) is stored in the finger sector (−45°, 45°). SRR, systematic research report; GDV, gas discharge visualization.

**Research**

This field of study shows that GDV method can be applied almost everywhere where human is and whatever he does. These two examples show that such human activities as polar expeditions and alcohol drinking are not an exception from the large field of applications of EPC technique, and that there are some significant correlations.

**TABLE 8. SUMMARY OF SRRS IN RESEARCH FIELD OF STUDY**

<table>
<thead>
<tr>
<th>Citation</th>
<th>Number of patients</th>
<th>Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Om 2004[52] 20 (polar explorers)</td>
<td>Correlation between the adaptation period of polar explorers and the characteristics of dynamics of entropy and GDV-gram parameters. The length of adaptation period is quite unique for every participant. Particularly, possible adaptation anomalies, such as prolonged adaptation syndrome, can be disclosed with the help of the described technique of entropy control.</td>
<td></td>
</tr>
<tr>
<td>Om 2004[83] 120 (98 men, 22 women)</td>
<td>By the use of GDV technique it is possible to make a conclusion with a high degree of probability about concrete changes in organism systems of a chronic alcoholic person.</td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

There are several limitations to this study. First, the number of the studies based on EPC/GDV technique in medicine and psycho-physiology is relatively small, and the quality of presentations is generally not high. Therewith number of all studies based on GDV technique is not too large because this technique is comparatively young in scientific world. Our literature search was limited to Russian and English papers. It is possible that some studies were missed because they were not presented during last 5 years. But despite its young age EPC/GDV technique shows very good results in the searched fields of study and becomes more and more popular every year. Another limitation is the possibility of bias in evaluating the studies. We attempted to avoid this by using accepted checklists.
CONCLUSIONS

We have made several conclusions regarding EPC analysis based on GDV technique implementation in traditional medicine, psycho-physiology, alternative medicine and research studies.

1. Systematic review has revealed that EPC/GDV method is being used in many different applications in the abovementioned fields of study and shows excellent or very good results.
2. Researchers have already found diverse correlations between EPC/GDV parameters and various medical, psychological and physiological parameters of human. And they continue their researches with an aim to find other correlations.
3. The software and equipment EPC/GDV-complex is a convenient and easy to use device, which allows examining patients with various pathologies and, therefore, offers a wide range of applications. GDV method has already showed itself as express-method of evaluating of human organism psycho-physiological state and trait.
4. The investigations showed that the GDV-method delivers valuable diagnostic information on the functional state of patients, allows monitoring their state and constitutes a convenient and easy method for conducting preventive examinations of individuals, professional training and control in various areas of application.
5. All RCTs reviewed suggest GDV method as prospective and effective method for different nosological and psycho-physiological applications and investigations.
6. There are no negative or undesirable characteristics given to GDV method in all reviewed papers, also there are no contraindications to application of EPC technique.

ACKNOWLEDGEMENTS

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REFERENCES


