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***Report and results and expert opinion
on the non-invasive cellular micronutrient
analysis, and additional heavy metal tests as
deposit in tissues with the OLIGOSCAN***

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The OligoScan - system:

The Oligoscan allowed to use the technology of the Raman spectrometer, a method for rapid bioanalysis, easy to use and with valuable tips for good counseling of patients.

The levels of trace elements and minerals in the epithelial cells are stored for the normal metabolism in the tissue minerals. Therefore, one can first identify deficiencies or defects in the epithelial cells, often for months or years before the serum values differ.

Previously it was very difficult and costly to measure the bio-availability of minerals and trace elements:

The values measured in the serum indicate the minerals that circulate in the blood at the time of removal - are fluctuating values.

The values measured in the urine, are values of the precipitated minerals. They are also uncertain.

The minerals on the hair analysis shows that in the metabolism in the past (almost up to 3 months ago) has been done, and is very sensitive to the substances with which the hair comes into contact: dyeing, exhaust fumes and other environmental factors

For these reasons, the epithelial cells are the selection criteria, if one wants to recognize the mineral reserves of the body.

The Oligoscan allows "mineral land" and to determine the heavy metal load of clients. In practice, applications can be created quickly balances, reliably and accurately in order to determine the needs objectively.



Oligoscan –Test:

Since May 2012, our practice approximately 650 tests were performed with the Oligoscan.

As of July 2012, a new software for the official test series was programmed. With the new software, it is possible that micronutrient measurements on near-surface blood vessels from the blood and perform as commonly in the epithelial cells of the tissue.

This allowed better comparisons and contrasts can be realized, which in turn was also a safe quality determination easier and clearer.

From July 2012 to mid-December (5 months) we had with certain specified requirements to test for 59 different people / test subjects by using repeated analyses. The entire project is divided into 4 group analysis.

The 59 people in our practice are well known in terms of other laboratory values, physiology, history and Psychosomatics (approximately to the lifestyle). We will also certainly - despite marked individuality of the people - an evaluation of the results circumscribable.

Reconnaissance and observation for the use of Oligoscan:

Finding questions:

1. Is the Oligoscan in medicine or for the health as a testing device used?
2. Is the non-invasive application for the analysis of micronutrients and heavy metal tests in the cellular tissue - possible using the Raman laser spectrometer?
3. Evaluation or analysis stability at repeated analyses
4. Comparative studies of micronutrients and heavy metals in the connective tissue and blood (part of blood is approximately 85%)
5. Application security and the best opportunities with new knowledge
6. New knowledge and other advantages over other methods or ways



group A

consisting of

- o 43 test subjects, where within 5 months 3 measurements every 6 - 8 weeks had been done
- o a small part of 17 people presented to a more conscious lifestyle, the other remained constant in recent lifestyle ratio
- o 21 people have reinitiated with algae or zeolite therapy

results:

Heavy metal analysis:

- o The group of 21 people (15 with lifestyle changes) have demonstrable improvements or reduction of heavy metal, but they distributed differently. This is understandable due to the individuality of the people.
- o The repeated test measurement confirms this with fluctuations of 4 to 8%.
- o Furthermore, the values at the initial measurement in the blood were much lower than in the tissue.
- o At the 3rd Measuring blood and tissue were significantly lower, and the difference between blood and tissue as well. This is logical and almost expected and was very good with the Oligoscan analyzed.

Micronutrient analysis:

With the 26 persons without lifestyle changes the values in the content were compared for all 3 measurements varying from 5 to 20%;

This was the same in the blood and tissues.

Comparing this value changes with the new history of statements, then these fluctuations can be explained clearly in the behavior of people.

Thus shows the Oligoscan sufficient accurate statement.

At the times of day but was not respected in this case, therefore, the scattering value tolerances little further (see Group B).



Group B:

consisting of

11 people

strategy:

Within 12 weeks, 3 measuring cycles, namely:

Everyone has 3 measuring cycles, the test day 6 measurements (without repetition or confirmation measurement)

Morning - midday - evening

with blood testing and tissue testing

All persons held their lifestyle constant (according to the instructions and reports)

results:

In blood:

From morning to evening measurement measuring almost all micronutrients have risen greatly in the amount of (food-reasons, age differences, etc.).

For all the similarities were 3 cycles of average deviation of about 15%.

The heavy metal reviews increased in some individuals during the day. But this in turn was similar in all 3 cycles.

In tissue:

Depending on the stress (physical exertion or other stress - reports of people) took the values of the analysis of morning recording over from lunch to dinner measurement. This is well known and has been reproduced from the corresponding Oligoscan.

Characterized all three cycles the divergence are understandably each slightly larger - between 10 to 20% (but with the same tendencies).

The heavy metal reviews remained on day 3 measurements at almost stable (divergence about 5%). Even for 3 cycles considered together, the analysis values are quite stable, also only 5 to 8% divergence.

From a medical perspective, these values for the history of psychosomatic medicine and different people are moderate trend is accurately and sufficiently sensitive.



group C:

Consisting of:
9 people (clinical patients)

strategy:

- o Comparison with Oligoscan test method and invasive blood laboratory analysis.
- o Two measurements at a distance of about 8 to 10 weeks of therapy
- o (with treatments taking zeolite + other supplements and medications)
- o Comparison Test as blind study)
- o The Oligoscan on test day were 3 measurements (morning, afternoon & evening) carried out, namely vascular and tissue measurements.
- o The corresponding blood lab analyzes were 1 - 2 days before or after it performed.

results:

At the first measurement could find that the vessel-blood readings from Oligoscan and the blood lab analysis up to 3 minerals almost identical and were for 3 minerals, a divergence about 15 - 20% (these variations are already given on day organic) measured were.

In the second measurement after therapy

there were similar proportions when comparing the blood vessel measurement with the blood lab analysis.

But the values in the tissue the intensities was somewhat lower, and the scattering of the individual minerals vary somewhat larger.

Medically speaking, this is logical and well known that in the tissue (more important rating than the blood) in this case the description of mineral values are generally lower than in the blood.

Also in this group analysis, the application or the use of proven and Oligoscan find herewith the required recognition.



group D:

Special heavy metal - test as a comparison test with the blood laboratory analysis with 4 people with high heavy metal pollution

strategy:

- o Test time approximately 4 months
- o The Oligoscan 4x 2 measurements were performed (blood vessels and tissues).
- o In order to ensure the measurement sensitivity and stability, after each measurement is carried out directly Oligoscan one repeat measurement.
- o The blood lab analysis at the beginning and end of treatment (detoxification).

results:

Oligoscan-comparison tests:

Basically, the heavy metals in vascular measurements were always a little lower, and approximately 10 to 15% more differentiated than in the analysis of tissue (both with all course readings).

This was also confirmed in the direct repeat measurements (quality assurance).

Also, we found that by the treatment, the test values have improved for the benefit of the patient, and that the test results from the measurement vessel have improved faster than those in the tissue.

This is a crucial statement, regarding the evaluation of which measuring method for the follow-up or treatment approaches should rather find useful.

Analysis of tissues seem to be more important than the measurements in the blood when it is the heavy metal tests.

The safest way is determined the punching method, but again, hard to imagine as a standard measurement. Oligoscan a method with a punching method for ethical and financial reasons could not be performed.

And also, the use of Oligoscan not initially see the high science into place. The Oligoscan but the previous test results, but for the purpose of statistics may be useful to many people under Search for science.

In all tests and is always parallel to the Oligoscan micronutrient measurement performed the heavy metal analysis and documented (for details in the summary).



Summary and Conclusion:

The Oligoscan - a Raman spectrometer - for the non-invasive analysis of micronutrients and heavy metals in human tissue (epithelial cells) or blood (from blood vessels with small part of tissue 85-15%).

All already briefly described test series or focus groups have shown that the system "OLIGOSCAN" allows the task just mentioned and that you can use this method as a supplementary examination in medicine.

Micronutrient measurement performed the heavy metal analysis and documented (for details in the summary).

For the actual state and measurement for the initial evaluation of cellular micronutrient levels or cellular disorders, the use of sensitive Oligoscan satisfactory quality usable.

The safety on the highest accuracy or precise repeatable measurement results can be derived from many other experiences not say entirely, since one has to do basically with actual state measurements and with many unknowns (without limitable value adjustments) of the individual body, which not 100% assessment permits.

Variations of about 3 to 8% are acceptable for standard measurements.

Sometimes came to suspect that the system or the measurement with the Raman spectrometer is more sensitive than the specified requirements.

According to previous experiences and compiling the evaluations off can appreciate the review of the data table to about 80 to 85% of actual results.

With the current version (and software), and you can not want to replace the existing laboratory analysis tests, but rather serves as a complementary method.

Therefore, the application of Oligoscan in preventive medicine and nutritional medicine and lifestyle counseling are used.



Special benefits for the use of Oligoscan

1. A non-invasive technique or application without the pain and risk of infection.
2. No big complicated preparation or time demands for measurement.
3. Test time including patient data + scanning with evaluation data below 3 min.
4. A bad application calls automatically replicate.
5. A comprehensive presentation of the test scores facilitates any further advice.
6. A safe, simple and reliable addition to medical history and other tests.
7. The control tests can be performed individually and compared easily.
8. Cost effective solutions are already available - lowest mark

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Specific comments on OLIGOSCAN - report

First Application:

- o Before the trial started a series for the report, we first examined the manufacturer's recommended application.
- o The hand scanner of OLIGOSCAN is easy to use and safe.
- o The scan is easily and reliably reproduced.
- o This is the 4 - point scanning for additional security.
- o The palm area of the non-active hand is well suited.
- o The color remains in the palm for the whole year (almost a lifetime) the same and there are also expected to barely pigmentation problems, even with dark colored people. Please do not use detergent or disinfectant. Palm must be dry.
- o For the blood tests after many individual tests the hand artery was determined by the non-active hand xxxxxxxxxxxxxxxxxxxxxxxx.
- o This artery with neighboring vessels lies fairly close to the surface, and between them is hardly tissue (skin and the vessel wall).
- o The specified depth ranging from 3.5 to 4.5 mm is guaranteed and thus, this blood test application possible.
- o Active-sector and non-active hand in the tissue measurements show different values and this also to different times of the day. The non-active hand for reliable evaluations less stressed and therefore suitable for comparative measurements more.





Comparisons and measurement times:

- o We have seen when comparing pre-test (test application) with the same people that the blood values behave very often the tissue values in the evaluation analyzes the opposite.
- o blood values decreased more often (due to the diet + health)
- o tissue values changed opposite decreasing due to exercise and other stress.
- o Some analyzes showed the micro-nutrients in the tissue to varying degrees to each other, the evening moon (such as zinc, magnesium, calcium and sulfur). It is also the micronutrients are already dependent on food in a short time - change stress easily and content in standard tissue - movement.
- o In the analyzes of blood from the blood vessels to the fluctuations in the evening measurements are somewhat diffuse growing.

The result:

- o blood analysis results are always slightly lower in the morning than in the evening.
- o In contrast, this was in the tissue - higher morning than in the evening.
- o Therefore, we have a lot of tests in the same persons to 3 times of the day (morning - midday - evening) performed. Especially compared to the test group C.
- o We hereby noted again that the Oligoscan analysis has proven very good in terms of quality or sensitivity.
- o We put this in comparison with vascular blood and laboratory analysis also found. Both had the same time of day to be carried out, otherwise the variations were found.
- o From this simple way to show us the Oligoscan to provide a number of diagnoses for the micronutrients, especially to open up these interactions in tissues and organs (important for the actual necessary therapies).