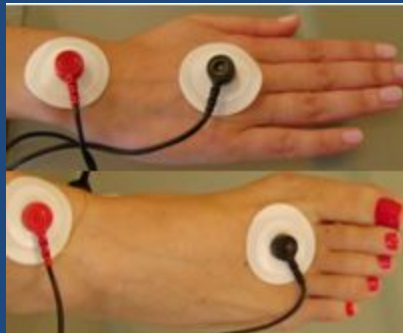


КОМПЛЕКС ES TECK

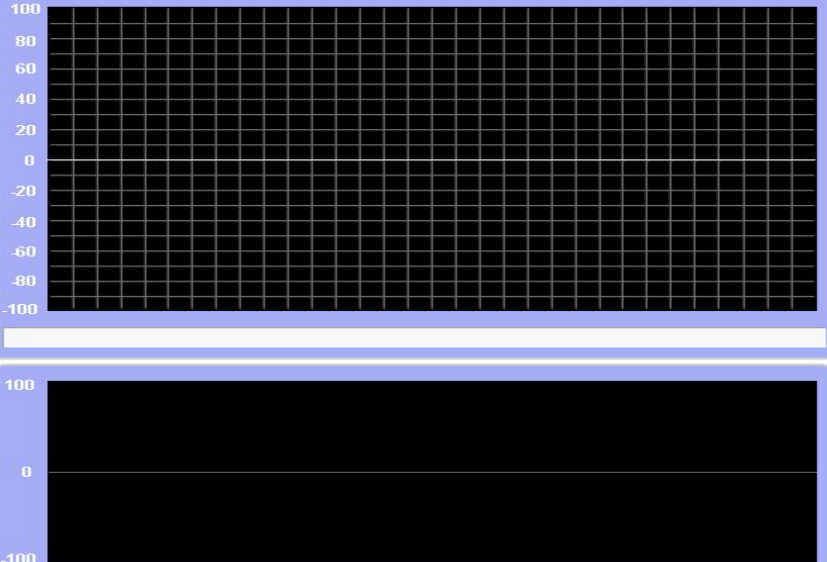

СОСТОИТ ИЗ 4-Х МЕТОДИК (HRV, SpO2, ВС, EIS)



Проведение измерений ES Teck

ESTECK

The sy_

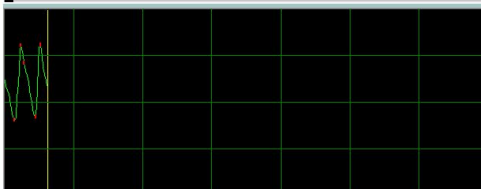
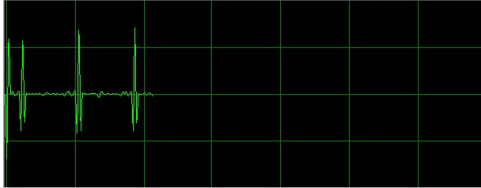


100
80
60
40
20
0
-20
-40
-60
-80
-100

100
0
-100

ESTECK

HRV and SPO2 scanning ...




Scale X Scale Y
x1 x1
x2 x2
x4 x4

Scale X Scale Y
x1 x1
x2 x2
x4 x4

Type
 Original signal Software filtration

HSF filtration
 High pass filter 0.1 Hz
 High pass filter 1.0 Hz

BSF filtration
 Band stop filter 50 Hz
 Band stop filter 60 Hz



HR [bpm]	RR [ms]	ECG Quality [0..100%]
---	---	---
10	97	93

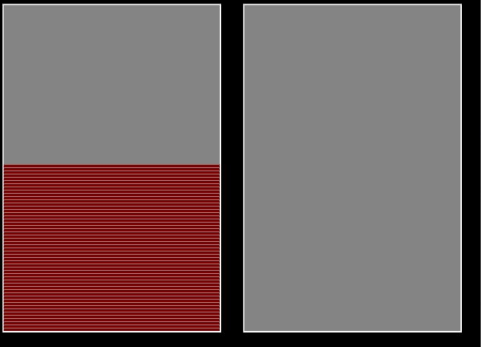
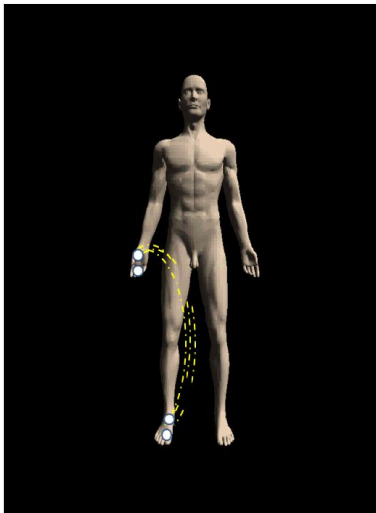
SPO2 probe state	Wave value
ON	43

Start Stop

ESTECK

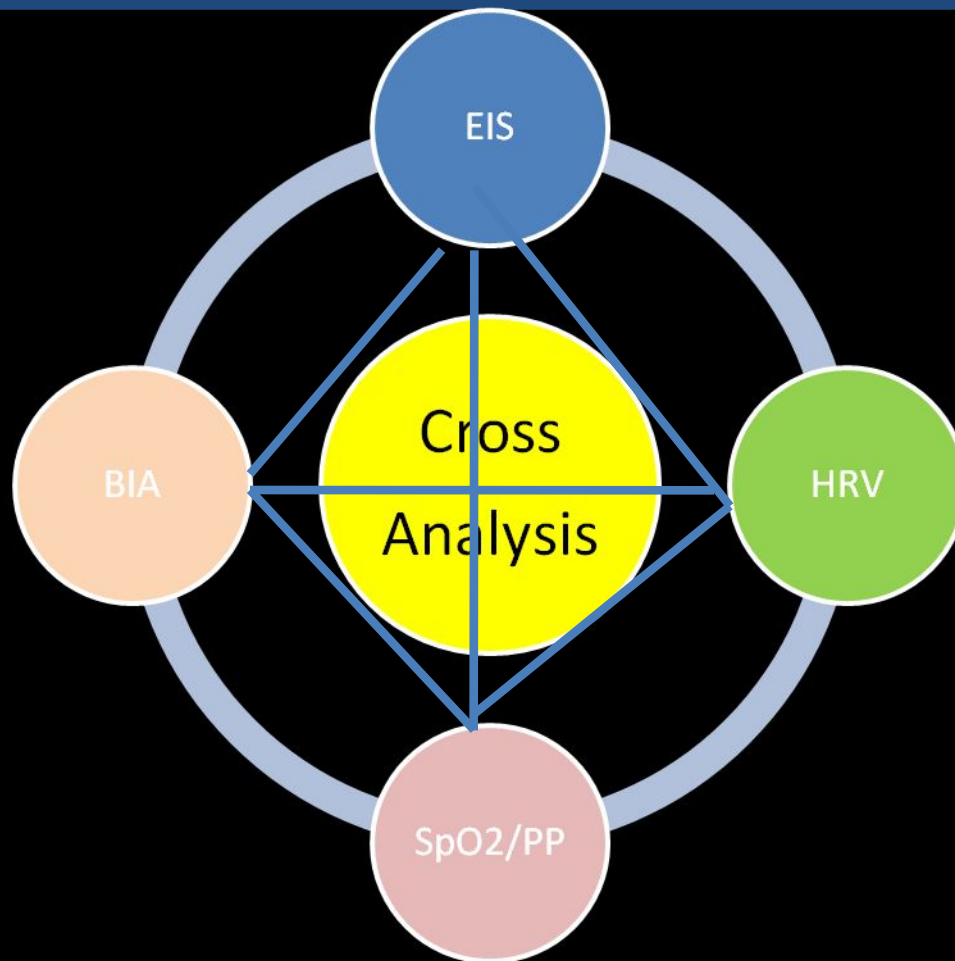
BC scanning ...

R = 505 Ohm Xc = - Ohm



Start Pause

ПЕРЕКРЕСТНЫЙ АНАЛИЗ РЕЗУЛЬТАТОВ



ОСНОВНЫЕ ПАРАМЕТРЫ E.S TЕСK КОМПЛЕКС

- **HRV модуль (вариабельность сердечного ритма):** Анализ ритмов NN или RR интервалов электрокардиограммы, комплексный анализ параметров вариабельности сердечного ритма .
- Модуль рассчитывает числовые параметры измеряемой ЭКГ
- **Оценка параметров симпатической и парасимпатической нервной системы.**
- **PP модуль:** Анализ ритмов пульса методом фотоэлектрической плетизмографии.
 - **Исследование параметров ССС**
- **EIS модуль:**
 - **Мониторинг заболеваний, функционального состояния и терапии**
- **BIA модуль:**
 - **Измерение и мониторинг параметров композиции массы тела**

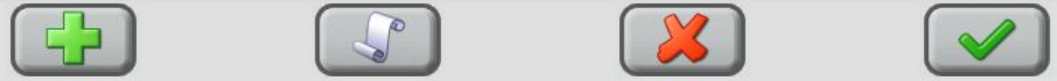
БАЗА ДАННЫХ ВИЗИТОВ И ИЗМЕРЕНИЙ



DATABASE

PATIENTS

Last Name	First name	Gender	Date of birth	Code
2_30		Female	30-1-1931	2_30
1_03		Male	3-6-1993	1_03
1_24		Male	24-2-1994	1_24
2_17		Female	17-5-1938	2_17
2_24		Female	24-4-1954	2_24
2JB05		Female	5-7-1952	2JB05
1_13		Male	13-3-1976	1_13
2_16		Female	16-2-1938	2_16
1_28		Male	28-5-1970	1_28
1_03		Male	3-7-1996	1_03
1_28		Male	28-4-1977	1_28
1b28		Male	28-6-1957	1b28
2T27		Female	27-8-1933	2T27
2LN05		Female	5-1-1963	2LN05
1DR02		Male	2-8-1944	1DR02
1RV13		Male	13-5-1972	1RV13
1M30		Male	30-5-1955	1M30
1g07		Male	7-7-1937	1g07
2DM16		Female	16-2-1964	2DM16



VISITS

Date of examination	Time of examinati...	Parameters
3.9.2008	13 : 38	A1 (61,0,100,100,0) N1 (55,0)
15.8.2008	7 : 34	A1 (64,0,100,99,0) N1 (55,0)



Admin: BASEMLD
 Patient: 1g07
 Visit 1: 3.9.2008 13 : 38 A1
 Visit 2:

E.S TECK РЕЗУЛЬТАТЫ



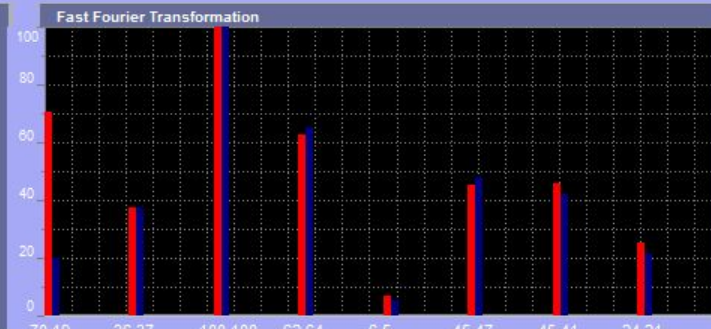
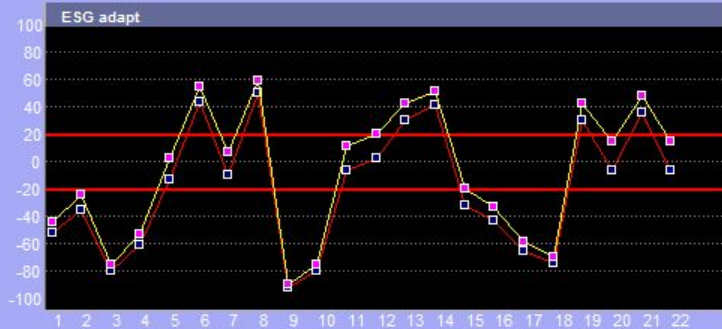
EIS АНАЛИЗ

DIAGNOSIS.pptx - Microsoft PowerPoint non-commercial use

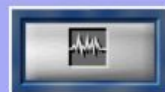
ESTECK

Patient: 1g07
 Age: 71
 Gender: Male
 Measurements: 1A1 (64) / 15.8.2008 7:34, 1N1 (55) / 15.8.2008 7:28

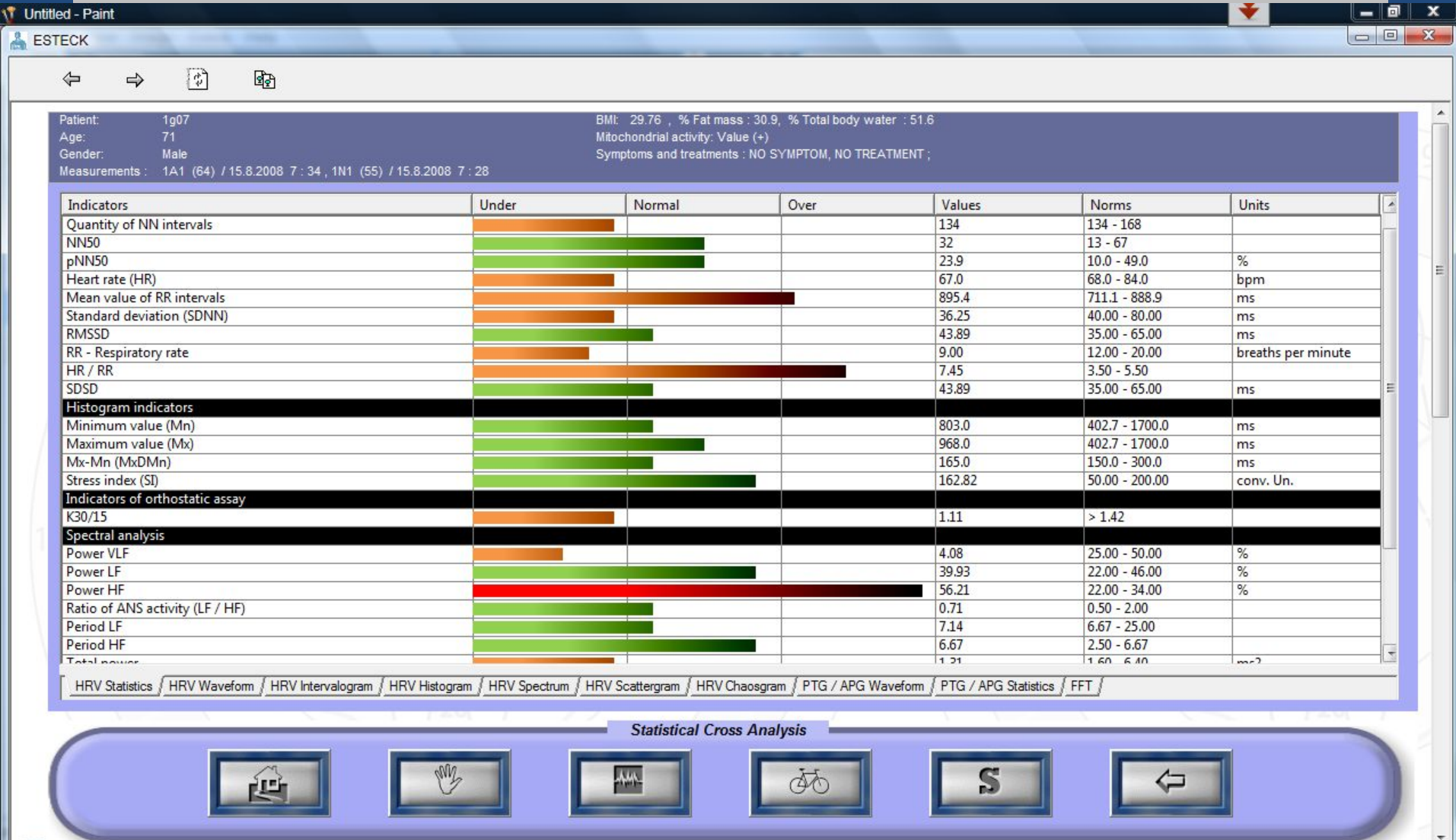
BMI: 29.76, % Fat mass: 30.9, % Total body water: 49.6
 Mitochondrial activity: Value (+)
 Symptoms and treatments: NO SYMPTOM, NO TREATMENT;



Statistical Cross Analysis

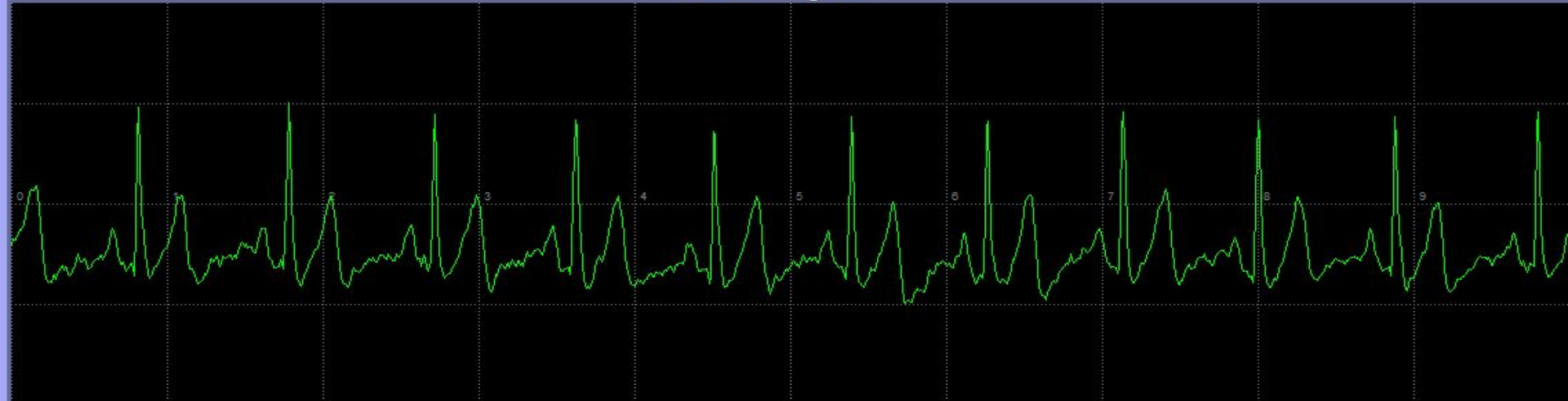


HRV СТАТИСТИЧЕСКИЕ ПОКАЗАТЕЛИ

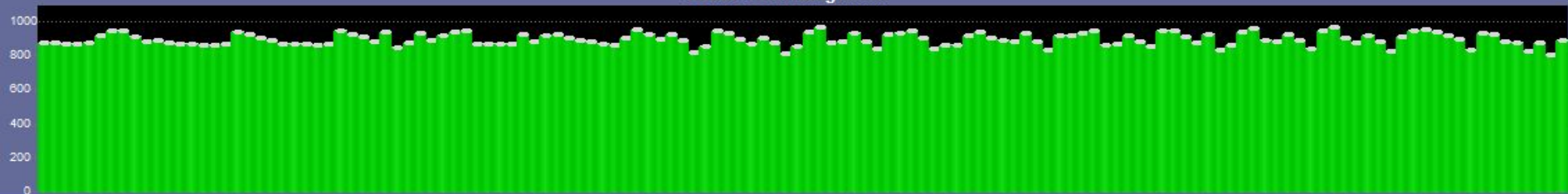


HRV ИЗМЕРЕНИЕ

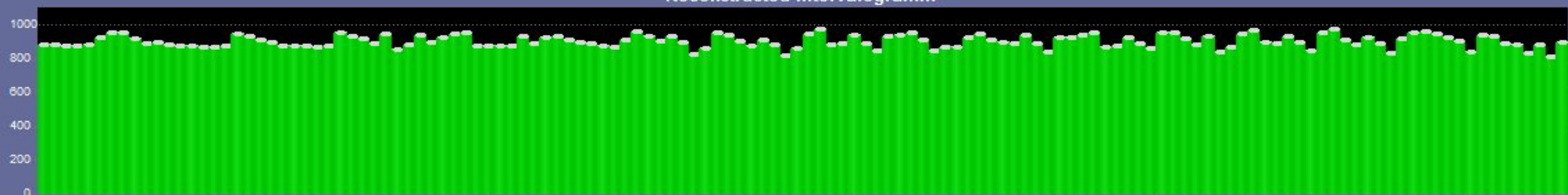
Electrocardiogramm



Initial Intervalogramm



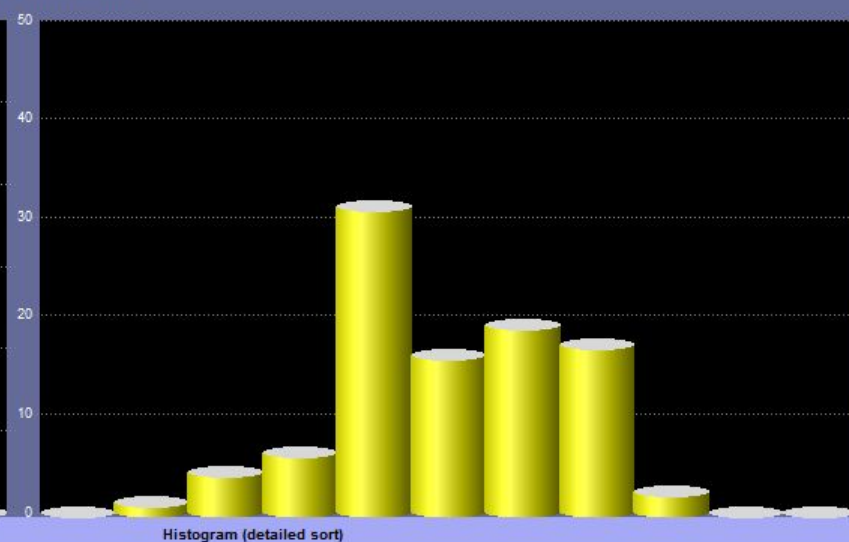
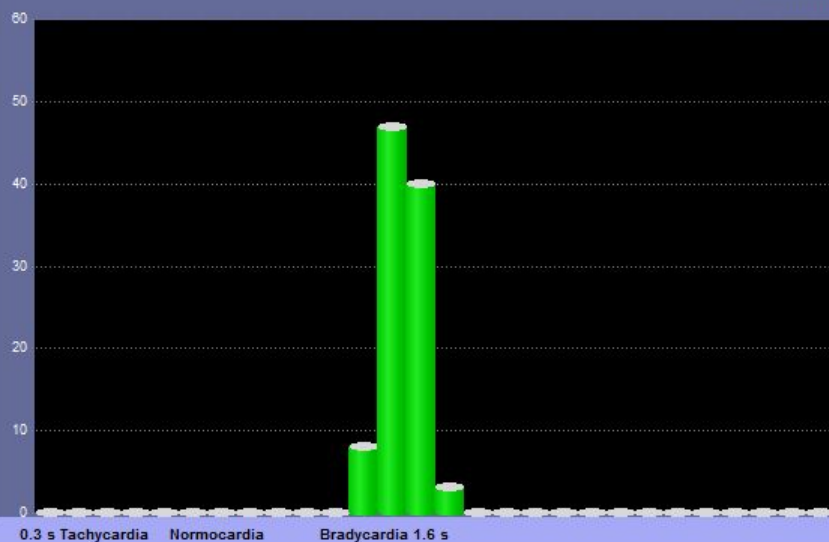
Reconstructed Intervalogramm



Interval NN Reconstructed interval Extrasystoles Artefacts

HRV АНАЛИЗ СПЕКТРА

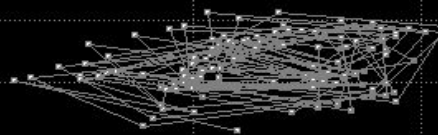
Moderate bradycardia



HRV Scattergram







HRV Chaosgram



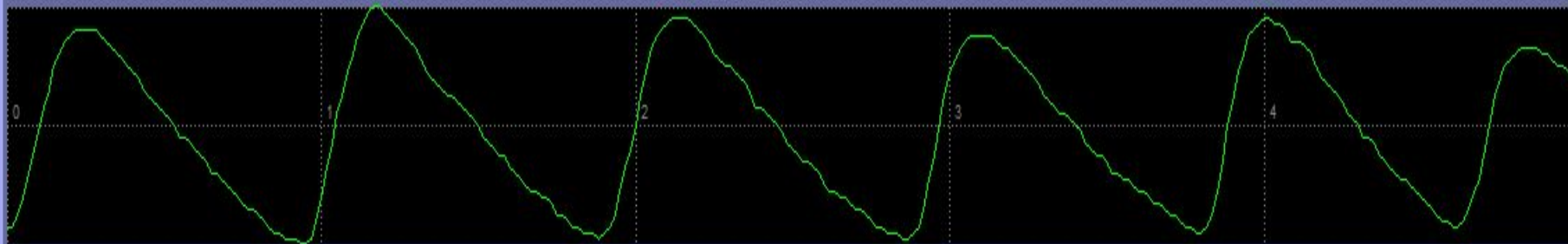
SpO2 РЕЗУЛЬТАТЫ (ФОТОЭЛЕКТРИЧЕСКАЯ ВОЛНА)

Patient: 1g07
 Age: 71
 Gender: Male
 Measurements: 1A1 (64) / 15.8.2008 7:34, 1N1 (55) / 15.8.2008 7:28

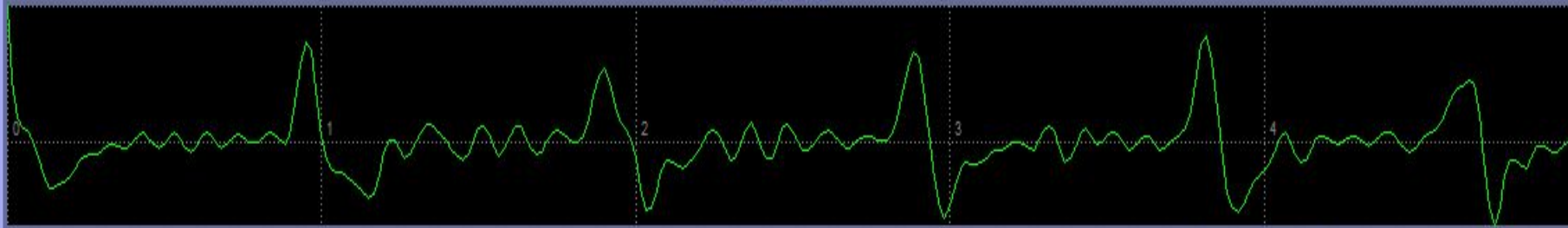
BMI: 29.76, % Fat mass: 30.9, % Total body water: 51.6
 Mitochondrial activity: Value (+)
 Symptoms and treatments: NO SYMPTOM, NO TREATMENT;

Indicators	Under	Normal	Over	Values	Norms	Units	Comments	Follow Up
SpO2 Measurement								
SpO2				98.0	94.0 - 96.0	%		
PR (Pulse Rate)				66	68 - 79	bpm		
Signal Strength				10	8 - 12	mm		
Wave Value				72	65 - 95	mm		

PTG Waveform



APG Waveform



ФОТОАЭЛЕКТРИЧЕСКАЯ ПЛЕТИЗМОГРАММА (АНАЛИЗ И РЕЗУЛЬТАТЫ)

Patient: 1g07

Age: 71

Gender: Male

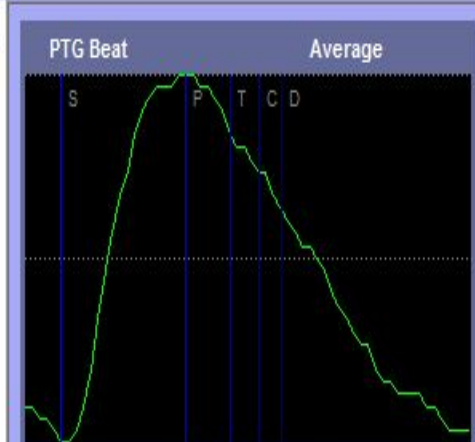
Measurements: 1A1 (64) / 15.8.2008 7:34, 1N1 (55) / 15.8.2008 7:28

BMI: 29.76, % Fat mass: 30.9, % Total body water: 51.6

Mitochondrial activity: Value (+)

Symptoms and treatments: NO SYMPTOM, NO TREATMENT;

Indicators	Under	Normal	Over	Values	Norms	Units
PTG Analysis						
AI (Augmentation Index)				1.03	1.05 - 1.45	
EEI (Ejection Elastic Index)				0.00	0.40 - 0.80	
DDI (Dicrotic Dilatation Index)				0.10	0.20 - 0.40	
DEI (Dicrotic Elastic Index)				0.10	0.10 - 0.30	
PR (Pulse Rate)				66	68 - 79	
PH (Pulse Height)				8.1	2.0 - 8.0	
Etc (Estimated Cardiac Ejection time)				233	260 - 380	ms
APG Analysis						
APG Type				75		
APG Aging Index				0.19	-0.32 - 0.32	
a-b				78		ms
a-c				123		ms
a-d				175		ms
a-e				346		ms
b/a				-0.41	-0.61 - -0.35	
c/a				-0.07	-0.34 - -0.06	
-d/a				0.65	0.32 - 0.58	
e/a				0.12	0.09 - 0.23	
APG Type: 21(25), 11(35), 25(45), 12(55), 7(65), 22(75) (%)						



<<

>>

E.S. TECK COMPLEX

- ПЕРЕКРЕСТНЫЙ АНАЛИЗ
- МОДЕЛИРОВАНИЕ ИНДИКАТОРОВ СОСТОЯНИЯ

ИНДИКАТОРЫ СИСТЕМЫ ПИЩЕВАРЕНИЯ

[34] Area around stomach

Patient: 1g07
Age: 71
Visit: 15.8.2008 7:34



Body System Analysis

Digestive system analysis

Indicators	Under	Normal	Over	Values	Norms	Units
EIS Indicators						
<u>Descending large intestine conductivity</u>				37.04	7.69 - 17.24	10 ⁻⁶ S.m ⁻¹
<u>Ascending large intestine conductivity</u>				37.04	7.69 - 17.24	10 ⁻⁶ S.m ⁻¹
<u>Stomach and duodenum conductivity</u>				23.26	7.69 - 17.24	10 ⁻⁶ S.m ⁻¹
<u>Liver and gallbladder conductivity</u>				24.27	7.69 - 17.24	10 ⁻⁶ S.m ⁻¹
<u>Pancreas conductivity</u>				23.26	7.69 - 17.24	10 ⁻⁶ S.m ⁻¹

Area around stomach

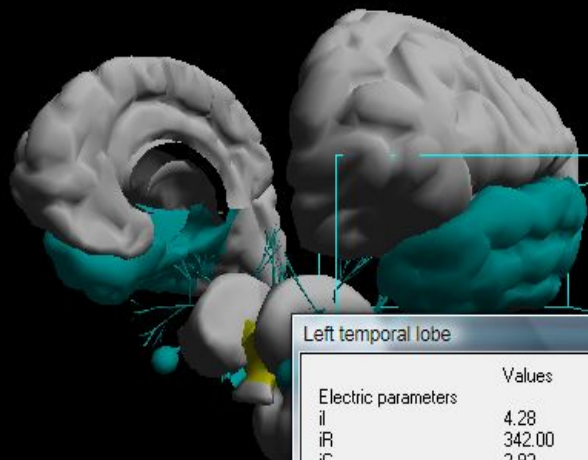
	Values	Norms	Units
Electric parameters			
iI	29.70	10.2 - 23.2	µA
iR	43.00	58.0 - 130.0	KΩhm
iC	23.26	7.7 - 17.2	10 ⁻⁶ S.m ⁻¹
Physiological tissue parameters			
ipH	7.364	7.31-7.35	I.U
icpH	6.986	7.00-7.04	I.U
VD2	53.4	48-52	%
O2d	76.6	78-82	mm/Hg
ATP	58.5	45-55	%
Microcirculation parameters			
A.C.H Pressure	38.4	33-37	mm/Hg
blood viscosity	5.3	4-5	10 ⁻⁴ Pa/s
I Oncotic forces	2.7	2.8-3.2	mm/Hg

Inflammation



ИНДИКАТОРЫ СОСТОЯНИЯ МОЗГА

[-55] Left temporal lobe



Left temporal lobe

	Values	Norms	Units
Electric parameters			
iI	4.28	10.2 - 23.2	µA
iR	342.00	58.0 - 130.0	KOhm
iC	2.92	7.7 - 17.2	10 ⁻⁶ S.m ⁻¹
Physiological tissue parameters			
ipH	7.275	7.31 - 7.35	I.U
icpH	7.095	7.00 - 7.04	I.U
VO2	44.5	48 - 52	%
O2d	71.5	78 - 82	mm/Hg
ATP	36.2	45 - 55	%
Microcirculation parameters			
A.C.H Pressure	29.5	33 - 37	mm/Hg
blood viscosity	3.5	4 - 5	10 ⁻⁴ Pa/s
I Oncotic forces	3.5	2.8 - 3.2	mm/Hg

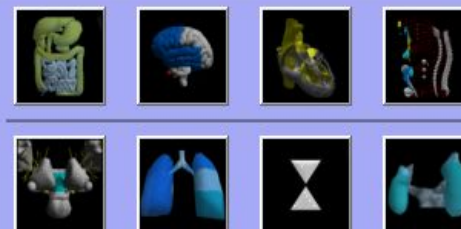
Patient: 1g07
Age: 71
Visit: 15.8.2008 7 : 34



Body System Analysis

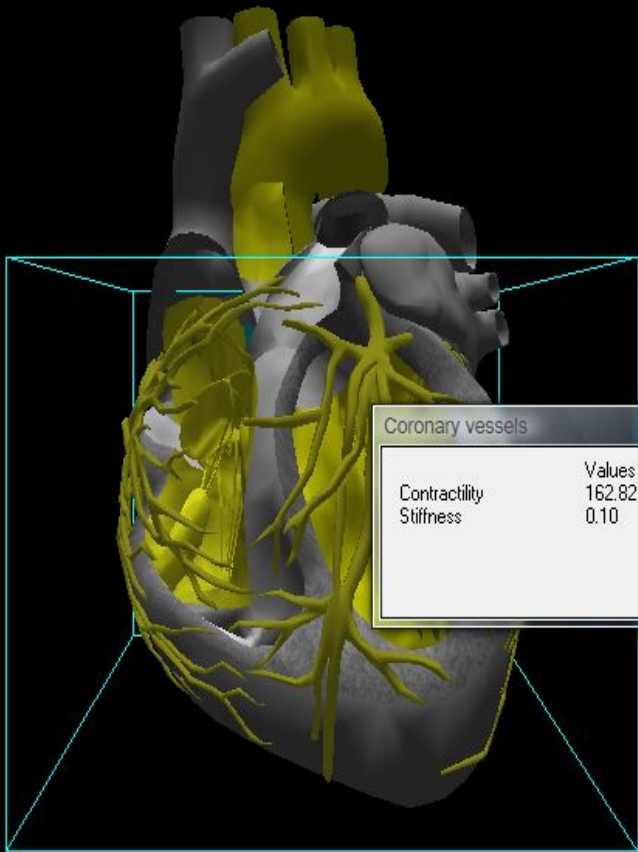
Brain system analysis

Indicators	Under	Normal	Over	Values	Norms	Units
EIS Indicators						
Neuronal excitability				5.200	2.000 - 5.000	ms
Cerebral Oxygen delivery				81	82 - 86	mm Hg
Interstitial cerebral pH				7.29	7.31 - 7.35	I.U
EIS Interstitial Cerebral Neurotransmitters						
Interstitial cerebral Serotonin				3.18	3.66 - 7.14	µA
Interstitial cerebral Dopamine				2.45	3.66 - 7.14	µA
Interstitial cerebral Catecholamine				39	22 - 46	%
Interstitial cerebral Acetylcholine				56	22 - 34	%
HRV Indicators						
Psycho emotional tension				4	25 - 50	%



ИНДИКАТОРЫ ССС (сердечно – сосудистая система)

[21] Coronary vessels



Coronary vessels			
	Values	Norms	Units
Contractility	162.82	50.00-200.00	I.U
Stiffness	0.10	0.20-0.40	I.U

Patient: 1g07
Age: 71
Visit: 15.8.2008 7 : 34



Body System Analysis

Cardiovascular analysis

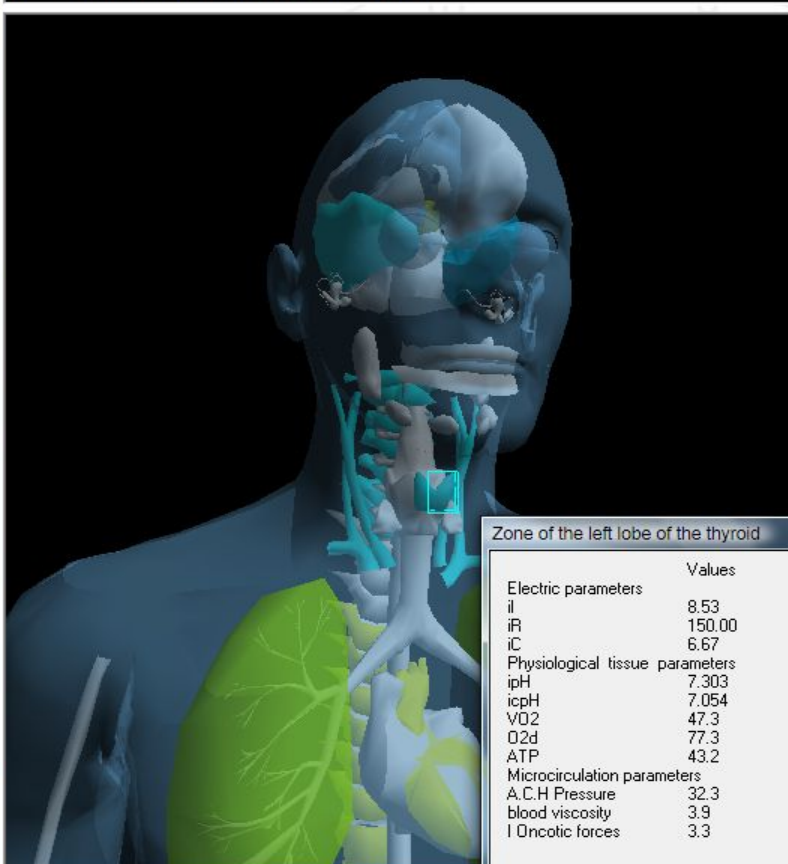
Indicators	Under	Normal	Over	Values	Norms	Units
EIS Indicators						
Heart ventricles' blood flow				15.80	10.21 - 23.20	µA
Triglycerides				>5.65	1.7 - 2.3	mmol/l
LDL Cholesterol				> -4.1	< 2.6 - 3.3	mmol/l
C Reactive Protein				1 - 3	< 1	mg/L
HRV Indicators						
HR Heart Rate				67	68 - 84	bpm
SI Stress Index				162.82	50.00 - 200.00	IU
VLF Very Low Frequency				4.08	25.00 - 50.00	%
LF Low Frequency Vasculomotor (vascular) center				39.93	22.00 - 46.00	%
HF High Frequency Parasympathetic system				56.21	22.00 - 34.00	%
MxDM Ratio				165.00	150.00 - 300.00	ms
PP Ind				No rhythm disturbances revealed		
EEI (Ejection Index)				0.00	0.40 - 0.80	
DDI (Dilatation Index)				0.10	0.20 - 0.40	I.U
DEI (Disturbance Index)				0.10	0.10 - 0.30	I.U
PDA Indicators						



ГОРМОНАЛЬНЫЙ БАЛАНС

ESTECK DIAGNOSIS.pptx - Microsoft PowerPoint non-commercial use

[-27] Zone of the left lobe of the thyroid



Patient: 1g07
 Age: 71
 Visit: 15.8.2008 7 : 34

!DV

Body System Analysis

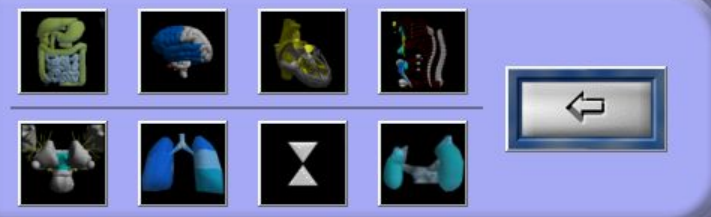
Hormonal system analysis

Indicators	Under	Normal	Over	Values	Norms	Units
EIS Indicators						
Interstitial TSH				0.3 - 2	0.3	mIU /L
T4 Thyroid hormone				12 - 24	9 - 24	pmol/L
Interstitial Testosterone				8 - 15	8 - 38	pmol/L
HRV Indicators						
interstitial Cortisol				70	110 - 390	nmol/L
interstitial ACTH				18.5	3.0 - 15.0	nmol/L
Insulin resistance				20		%
Leptin				4.0	10.0 - 15.0	ng/ml

Leptin
Significant decreased of blood serum concentration leptin

Zone of the left lobe of the thyroid

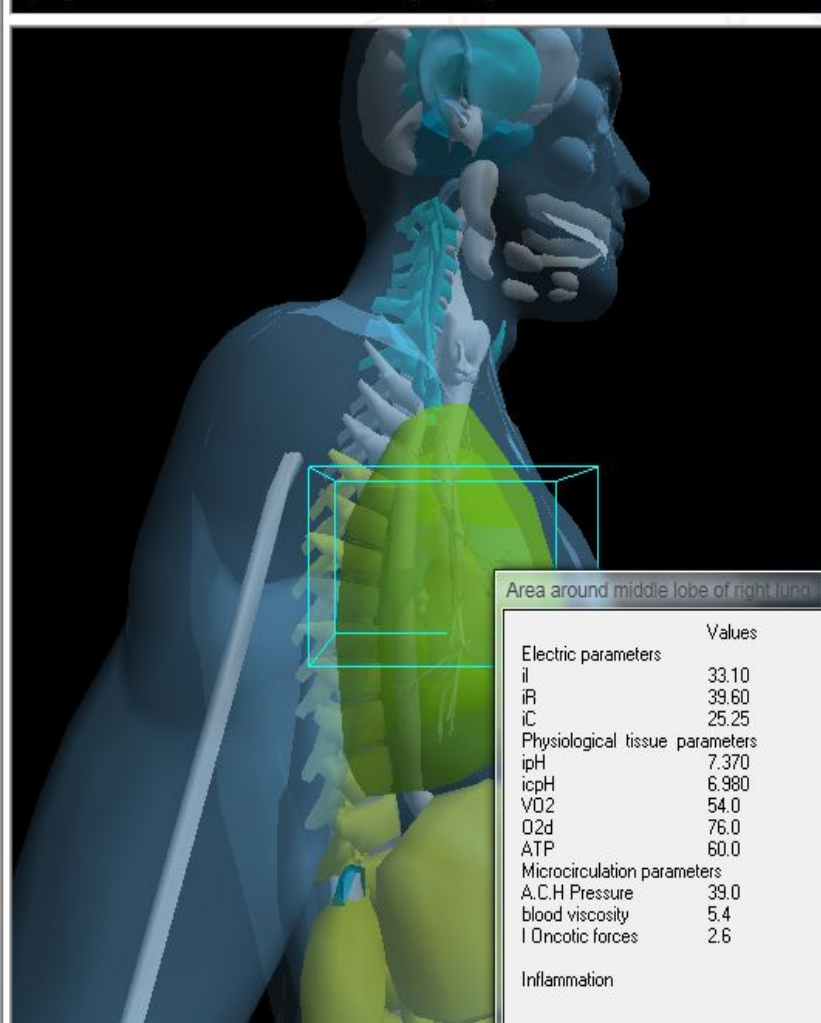
	Values	Norms	Units
Electric parameters			
iI	8.53	10.2 - 23.2	µA
iR	150.00	58.0 - 130.0	KΩhm
iC	6.67	7.7 - 17.2	10-6 S.m-1
Physiological tissue parameters			
ipH	7.303	7.31-7.35	I.U
icpH	7.054	7.00-7.04	I.U
VO2	47.3	48-52	%
O2d	77.3	78-82	mm/Hg
ATP	43.2	45-55	%
Microcirculation parameters			
A.C.H Pressure	32.3	33-37	mm/Hg
blood viscosity	3.9	4-5	10-4Pa/s
I Oncotic forces	3.3	2.8-3.2	mm/Hg



Windows taskbar: Bio Electrical Im..., Gmail - Inbox (68...), Microsoft Power..., ESTECK, ESTECK, Untitled - Paint, 4:05 PM

ИНДИКАТОРЫ СИСТЕМЫ ДЫХАНИЯ

[40] Area around middle lobe of right lung



Patient: 1g07
Age: 71
Visit: 15.8.2008 7:34



Body System Analysis

Respiratory system analysis

Indicators	Under	Normal	Over	Values	Norms	Units
EIS Indicators						
Bronchi Conductivity				10.68	7.69 - 17.24	10-6 S.m-1
Lung conductivity				25.25	7.69 - 17.24	10-6 S.m-1
Interstitial PCO2				50.14	41.00 - 51.00	mmHg
SPO2 Indicators						
SPO2				98.00	94.50 - 96.50	%
HRV Indicators						
Respiratory rate				9.00	12.00 - 20.00	breaths per r

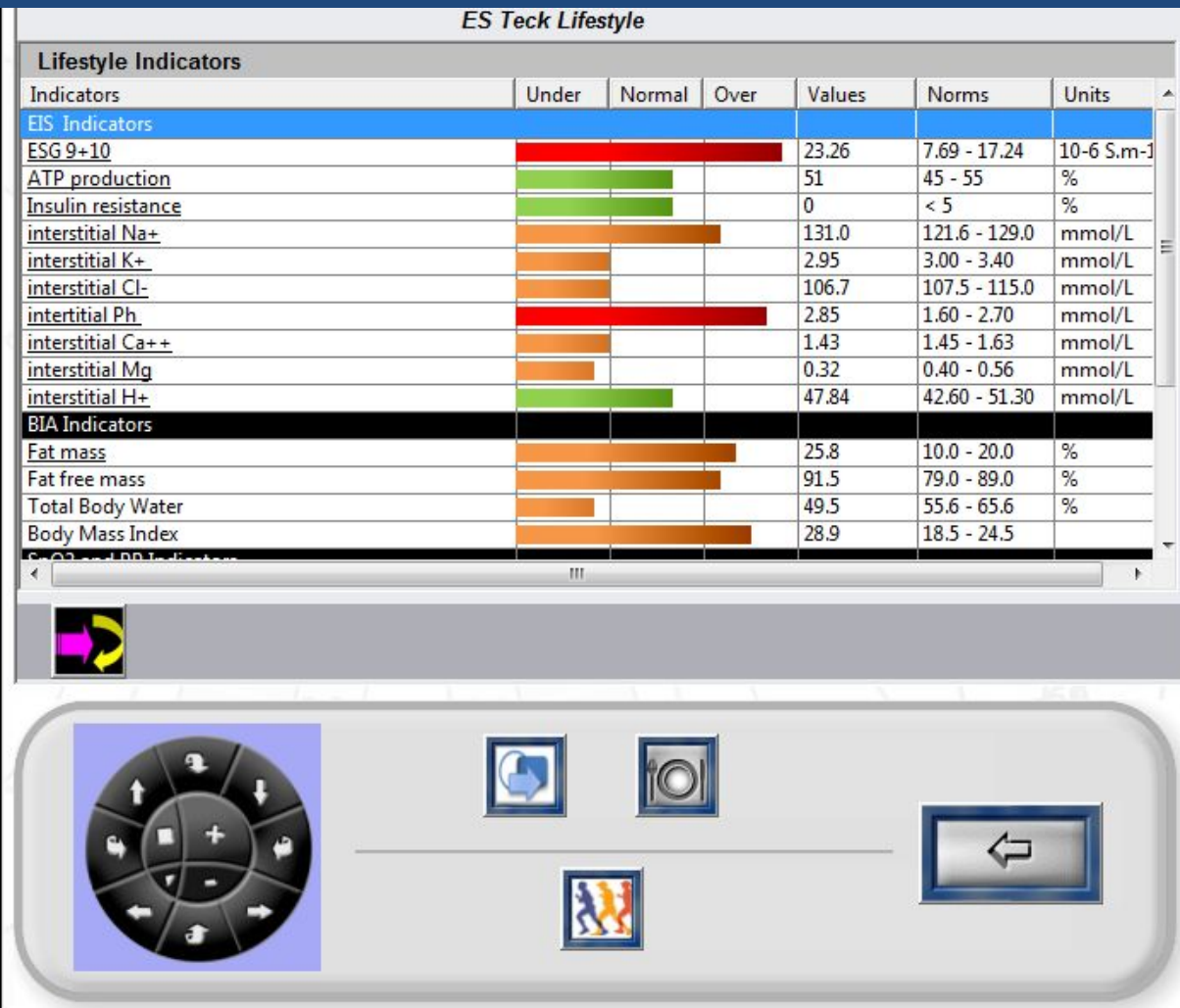
SPO2
Increased hemoglobin affinity O2. Oxygen is less available for release to the tissues due to the strong bond

Area around middle lobe of right lung

	Values	Norms	Units
Electric parameters			
il	33.10	10.2 - 23.2	µA
iR	39.60	58.0 - 130.0	KOhm
iC	25.25	7.7 - 17.2	10-6 S.m-1
Physiological tissue parameters			
ipH	7.370	7.31-7.35	I.U
icpH	6.980	7.00-7.04	I.U
VD2	54.0	48-52	%
O2d	76.0	78-82	mm/Hg
ATP	60.0	45-55	%
Microcirculation parameters			
A.C.H Pressure	39.0	33-37	mm/Hg
blood viscosity	5.4	4-5	10-4Pa/s
I Oncotic forces	2.6	2.8-3.2	mm/Hg
Inflammation			



Оценка и мониторинг параметров образа жизни (Life Style)



Советы по питанию (показанные, противопоказанные продукты...)

NOT RECOMMENDED FOODS

Vegetables

Egg Plant, Avocado

Animal protein

Salami, Frankfurters, Well-hung game, Marinated herring, Beef liver, Brain, Lard, Sausages, Bacon, Goose

Dairy products

Mozzarella, Margarine, Fresh cream, Cheese

Carbohydrates

Brewer's yeast, Sodium glutamate (often used in Chinese cooking), Chocolate, Ice-cream, Honey, Jam, Cocoa, Jam tart

Fats

Fried food, Mayonnaise

Drinks

Sweetened Cola Drinks

Oily foods

Almonds, Pistachios, Hazel nuts, Walnuts, Pine nuts

Fruit

Bananas, Pineapple, Dates, Fruit in syrup, Candied fruit, Dried fruit, Fruit jelly, Coconut

RECOMMENDED FOODS

Vegetables

Artichokes, String beans, Celery root, Leeks, Fennel, Dandelion

Drinks

Chicory

Fruit

2 fruits per day max

Herbs

Parsley

MICRONUTRITION

Trace elements

Magnesium

Plant therapy

Poppy, Passion flower, Aubeline, Hawthorn, Garlic, Cypress, Chestnut tree, Horsetail

COOKING METHODS

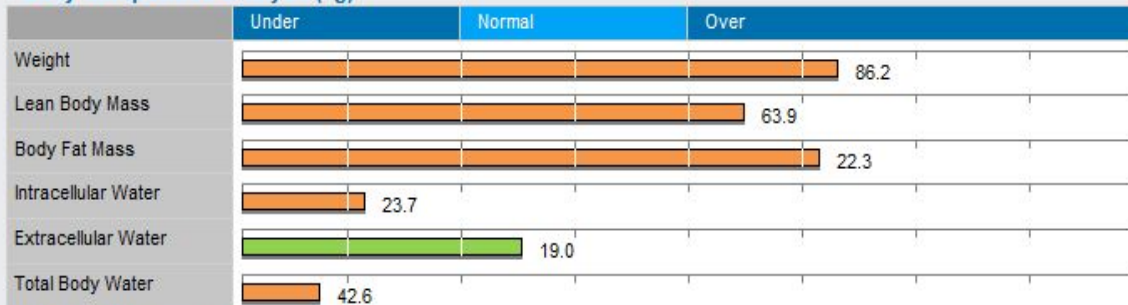
- Steaming is to be preferred to all other methods.
- For cooking food: olive, peanut or palm oil, without ever allowing it to smoke.
- For improved carotenoid digestion, cook: carrots, tomatoes, broccoli, spinach then add olive or colza oil after cooking.
- To prepare fish, marinate in lemon juice, wine or oil, then steam or poach in stock
- Do not burn or carbonize meat and throw away the gray.

Индикаторы композиции массы тела

Body Composition (kg)

Compartments	Values	Total Body Water	Lean Body Mass	Weight
Intracellular Water	23.7	42.6	63.9	86.2
Extracellular Water	19.0			
Dry Lean Mass	21.3			
Body Fat Mass	22.3			

Body Composition Analysis (kg)



Obesity Diagnosis (%)



Weight Control (kg)

Current Target Weight: 69.9 Fat Control: -9.3 Basal Metabolic Rate: 2003 Kcal
 Weight Control: -16.3 LBM Control: -5.3

Daily Activity Level:

Very light: stay at home, no activity

Overweight

Height: 172.7 cm

Weight : 86.2 kg

Fat free mass: 63.9 kg

Fat mass: 22.3 kg (25.8%)

TBW: 42.6 kg (49.5%)

Extracellular Water: 18.97 kg (-2.2%)

Intracellular Water: 23.67 kg (-9.1%)

Basal metabolic rate / 24 Hours: 2003 Kcal

Algorithms used :

TBW: Davies et al 1988

FFM: Deurenberg et al 1991

ECW: Sergi G, et al 1994

Actual Impedance:

Z = 417.4 Ohm

R = 415 Ohm Xc = 45 Ohm



Phase Angle (PA) = 6.2

The calculation of the body composition is made according to the Bioelectrical Impedance Analysis (BIA). BIA in tetra polar mode and mono frequency of 50KHz.

Statistical Cross Analysis



Мониторинг динамики показателей до и после спортивной нагрузки

Indicators	Value before sport	Value after sport	BIA and Modeling Monitoring
HRV Indicators			
HR	56	83	
HRV LF	25.59	49	
MxDMn	150	161	
BIA Indicators			
TWB			
ECW			
ICW			
EIS Indicators			
Cortisol			
Aldosterone			
Na+			
K+			
Cl-			
Ca++			
Mg			
Phosphates			
[H+]			
ESG 9/10 (VO2)			
SpO2% and photoelectrical Plethysmography Indicators			
SpO2			
Etc			
EEl			
DDI			
DEI			

Сравнение моделей состояния до и после спортивных упражнений в

FIS



Мониторинг показателей композиции массы тела

