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(86)	PCT/US2001/15598	(87)	WO 2001/87139
(86)	2001 05 13	(87)	2001 11 22

(81)	:	,	,	,	,	,	,
	EP	:	,	,	,	,	,
	,	,	,	,	,	,	,
(30)	60/204,424	2000 05 13	(US)				
(71)	가						
	,	97479,	213				
(72)	,	97405,	2732				
	,	97405,	2732				
(74)	:						

(54)

가 가 가
가 , ECG, 가 ,
가 가
/

2000 5 13
60/204,424

가 (' ,) 가 , , (1978)).
(,)

, , , 가 () ,

가 가

, , .(' .).

가) , X- () VO₂ 가
가

, , 가 ,

가 가 가 , ,

(가 VO₂) , ECG

가 , 가 , 가

, , 가 가
가 가

가

가

가

가

가 , ECG, ,

가

1

2

(40)

3

4

5

HRV

6

5 HRV

7

ECG

8

7 DECG

9

가

10

9 가

11 가

12

13

14

, , , , (), (CN)

, ECG(DECg), 가 (OW), (SR) 가 (HRV)

, 가

5가 가 , 5가 가

1 (10)

1 / 1 1

I-

1. 가
 2. ECG
 3. 가 , , , CN
 - 4.
 5. CN
- 5 / 가
- 가 ,
- 가 가 ECG
- (30 31) (10) (PRT)(15) 가 (21-31)(
- (38) (39))

(PRT) (CD)

(ID)(40)

ID(40)(2) , .

CD 50 (, PC,) (, , , ,) .

1 , CD(50) (51), (52) (53) 가 (50) .

CD(50) (60) .

2 , (40) 가 .

ID(40) (35) : HRV (21-24) ECGI(33), 가 DECG (3
 (25-27) ECG2(34), 가 (28-29) 가 (35), (30) (3
 6) SR (31) (SR) (37).)

(41-43) ECG 가 ADC(45)
 (46)

/ (46) PRT (48) . CD
 (58)가 .

(48, 58) CD- PRT (57)

(46) CD(50) . USB (59)
 CD(50) CD(50)

3 , 가 가 .

80 , 가 (52) CD
 (50) .

(81) . (82-86) 1

(82-86) RBA - .

(91) (.)
 (92) .

4 , (PRT) (112) , 가 .

(114) , CD(50) 가 ID(40)(
 ,) , ID(40) CD(50)

(116) , PRT (116) ,
 117 , 가 CD(50)
 , (118). (120) .

(52) (60)

5(3 81) (114) 가
가 (HRV) -
가 (HRV)

가 ()

가

HRV HRV

(10) HRV
(- ,)
, 가

HRV HRV 5

5 CD 50

6 /) HRV

HRV , 4 가

가 HRV ECG (ECG)

ECG (spikes) ()
R

ID(40) , 128 (152) 100
(RR) (154).

(156) - (191)(158, 6)

가 :

=0.15 0.4 Hz; = 0.04 0.15Hz; 0.004 0.04 Hz

(192) (193) (160).

172 , 가

:

() (VR);

(HR);

(SR);

;

;

;

(FCC)

(1984).

(194)

(182)

(181).

:

1. ;

2. ;

3.

VR() (), ,

가 HR, VR SR ,

() , ())

((6)

195 .

ECG(DECg) -

가 ECG .

DECg 가 7

DECg

가

가 DECg 가

8

DECg

6 DECg , 7 (21-27)가 (21-24) 4 ECG 2

(25-27)

HRV

201 , ID(40)

ECG

120

7). (ECG) (203) 10-60(30) R S (QR 20)
 210 , DECG (가 R S)
 (ACI), , VO2 , (alactic) (ALCI), (LCI),
 (AEI) (SAI) (API) .
 .(Beregovog, V.Y. Dushanin (1986)
).
 (220).

- :
1. ;
 - 2.
 3. () ;
 4. .

8 230 235 .
 가 (OW) - , , CN
 가 가 (가) , ,
 가
 가 (OW) .
 10 가 9 v , 가 v OW 가 .
 11 10 .
 가
 가 (<0 mV), (0-40 mV), (41-60 mV) .

(-) 가

가

가

A(0-1.5), B(1

.5-4) , C(4-7) .

A ()

B (, ,)

C , ()

가

가

)

(

301 , CD(50)

, ID(40)

가

가

(303)(7)

(330)(305)

- 가

, CD(50)(307)

. PRT

PRT 가

(309)(7)

가

, 335(313)

(11)

(315).

(317)

A() , 가

B() ,

C() ,

가 ()

(CNS)

) CNS()

CNS

()

),

(

, 10 60

, CD(50) 5(351)

PRT

가

가

(355)

(353).

(359)

()

10 . CD(50) (361)

PRT 10 가

()

(363).

60

60

10 ()

60 ()

(SR) - (CN)

13

가

가

SR

PRT가

CD(50) (381) , 1 (383) 50가

PRT (38) (1).

(385)

(387)

() (

(389).

1. CN ;

2. ;

3. .

, , PRT

14 1 2

1 (401) , , DECG 가 , ()

가 ,) (, / -

2 , , 가

/ /

가 .

가

가

, . 가 , ,

(57)

1.

가 ,

;

가 , ECG , ,

가 가

1 2. ,

가

1 3. ,

1 4. ,

가

1 5. ,

1 6. ,

1 7. ,

8.

8. A method of assessing the functional state and state of homeostasis in a human, comprising the steps:

가

;

가

;

가

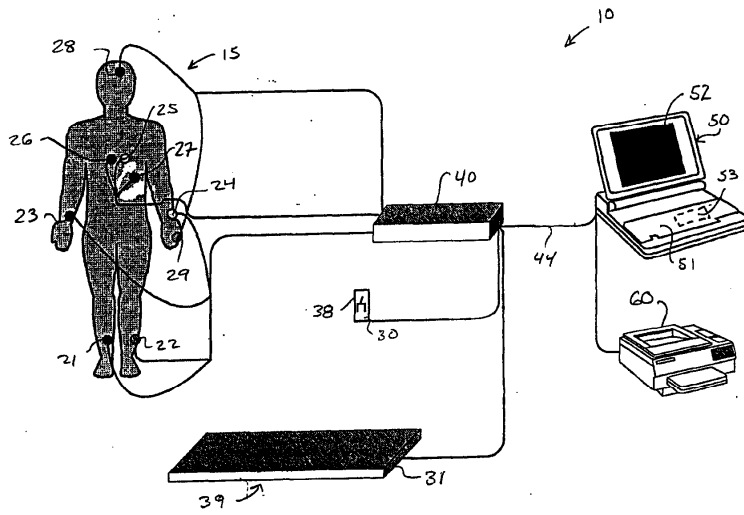
8 9. ,

;

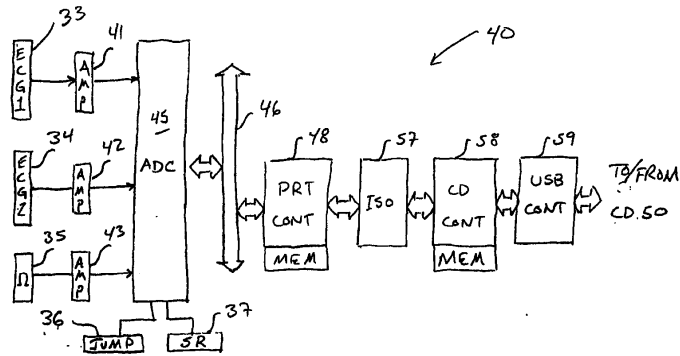
9 10. ,

가

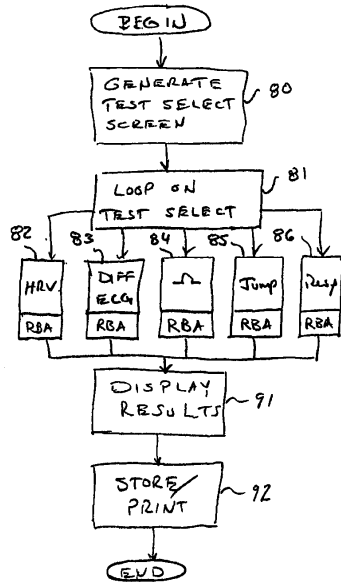
1



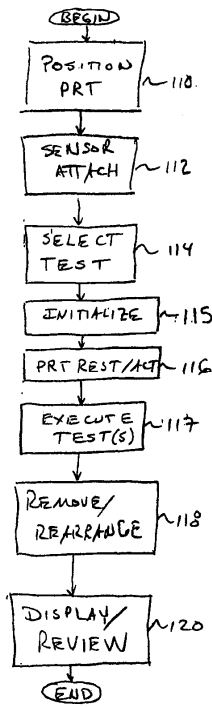
2



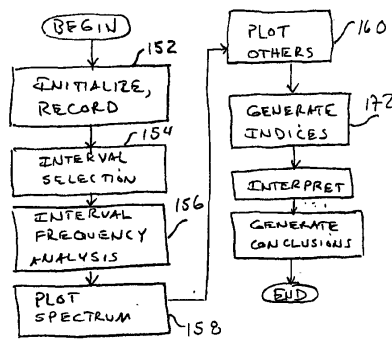
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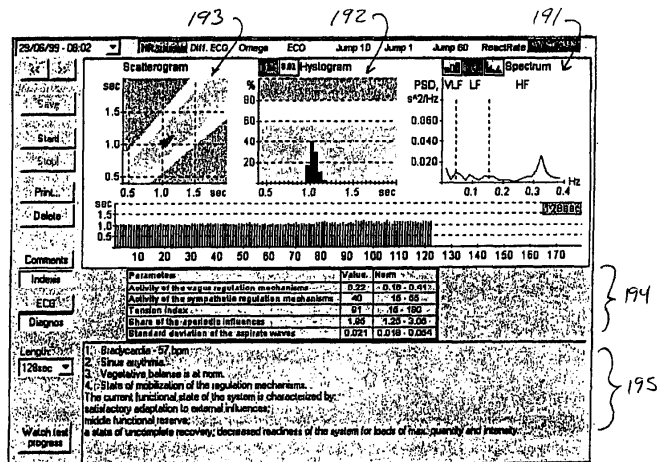
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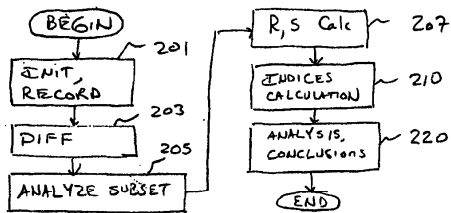
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6



7

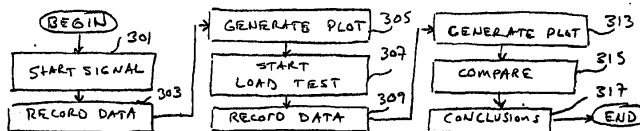


8

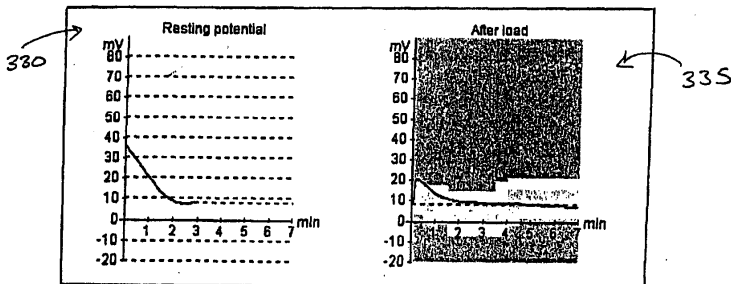
Parameter	Value	Norm
Aerobic power index	87	88 - 88
Aerobic efficiency index	79	80 - 80
Lactate quantity index	15	11 - 25
Lactate quantity index	16	12 - 20
Aerobic power index	109	100 - 300
Main metabolic power index	214	210 - 280
System's adaptation index	134	120 - 148
HR at maximum oxygen consumption	188	170 - 210
HR at anaerobic level	189	180 - 180

THE CURRENT FUNCTIONAL STATE OF THE ENERGY SUPPLY SYSTEM IS CHARACTERIZED BY:
 satisfactory functional reserves;
 decreasing of the speed of the recovery processes;
 moderate resistance to hypoxia;
 good aerobic reserves.

9



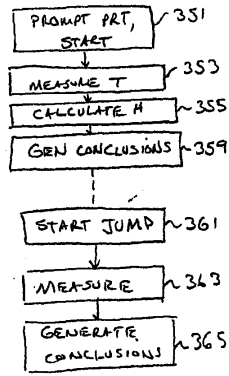
10



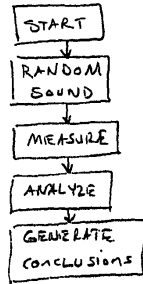
11

Change of the Ω potential after a load in % of the base potential	Characteristics of the mechanisms of regulation of systems (corresponding to time zones)		
	A	B	C
> 25	Insignificant hyperfunction	Significant hyperfunction	Insignificant hyperfunction
> 50	Significant hyperfunction	Significant hyperfunction	Significant hyperfunction
from 0 to ± 25	Norm	Insignificant hyperfunction	Norm
< 25	Insignificant hyperfunction	Norm	Insignificant hyperfunction
< 50	Significant hyperfunction	Norm	Significant hyperfunction

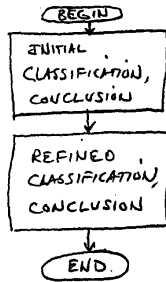
12



13



14



专利名称(译)	非侵入式测量装置和自适应响应方法以及人体功能状态		
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当前申请(专利权)人(译)	五兆波埃尔埃尔先生		
[标]发明人	MASAKOV LEONIDVASILYEVICH 마사코브레오니드바실리에비치 LARIONOV VLADIMIRBORISOVICH 라리오노브블라디미르보리소비치		
发明人	마사코브,레오니드바실리에비치 라리오노브,블라디미르보리소비치		
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代理人(译)	康, MYUNGKOO		
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外部链接	Espacenet		

摘要(译)

用于评估作为无孔的人的功能状态和体内平衡状态的装置和方法。特别地，当选择测试时，所选择的测试的评估是有效的并且是分析的或具有目的的。测试是心率变异性，差异ECG，ome是脑波，并且刺激测试的跳跃和响应可以参考它所暗示的期望。频繁测试致命，它评估与非侵入性数据记录方法不同的执行标准是调整反应成为可能。传感器，以及接口/适配器和计算设备的便携性可以称为它所促进的轻量化。

