

الملاحق

- المرفقات •

- ملخص البحث باللغة الأجنبية

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مرفق (٢)

بطاقة تسجيل مستوى هرمونى الكورتيزول والكورتيكوتروبين
فى الدم لدى لاعبات العدو والجرى

الكورتيكوتروبين	الكورتيزول	التشخيص قبلى / بعدى	الاسم	مسلسل

مرفق (٣)

القياسات الجسمية :

١ - قياس الطول Length باستخدام الرستاميتتر .

عند قياس الطول بواسطة الرستاميتتر تقف اللاعب في وضع معتدل بحيث يستند الظهر على القائم الرأس ويكون ملامسا له في ثلاث نقاط :

العقبين وعضلات الساق الخلفية - الاليتين - اللوحين - ويكون وضع الرأس معتدلا ، يحرك المؤشر الأفقى لاسفل حتى يلامس سطحه السفلى اعلى الرأس .

يحسب طول القامة بواسطة قراءة التدريج بالسنتيمتر (١ : ٧٠) .

٢ - قياس الوزن Weight باستخدام الميزان الطبى .

قبل القياس يجب عمل اختبار للميزان نفسه .

طريقة القياس :

تقف اللاعب في منتصف القاعدة (المساحة) للميزان حيث أنه عند الوقوف على الحد الامامى فان الثقل يقل بمقدار يتراوح بين (١٠٠ - ١٥٠ جم) ، كما أن الوقوف على مؤخرة القاعدة قد يزيد من الوزن الحقيقى بنفس النسب السابقة .

يحسب الوزن بقراءة الميزان بالكيلوجرام (١ : ٧٣) .

القياسات الطبية :

١ - قياس معدل النبض :

يستخدم جهاز قياس معدل النبض Pulse meter لقياس عدد ضربات القلب وطريقة تشغيله كالتالى :

- ١ - يشبك سلك التوصيل باذن اللاعبه بحيث يكون الضوء السدى يخرج من المشبك عند فتحة خلف الاذن .
- ٢ - يفتح زرار التشغيل الموجود فى الجانب الايمن للجهاز.
- ٣ - يضغط على زرار لقياس معدل ضربات القلب Pulse ، ثم على زرار البداية Start ليبدأ الجهاز فى قياس النبض الذى يظهر على شاشة الجهاز، فى حالة ظهور حرف E على شاشة الجهاز ينتظر قليلا أو يعدل مشبك الأذن.
- ٤ - لمعرفة الزمن لقياس النبض يضغط على زرار التوقيت Time
- ٥ - لالغاء الوقت السابق الذى حددته اللاعبه يضغط على زرار التوقيت ثم يضغط على زرار البداية .

٢ - قياس درجة حرارة الجسم :

يستخدم الترموميتر الطبى لقياس درجة حرارة اللاعبه حيث يطهر الترموميتر أولاً ثم يوضع طرف الترموميتر اسفل لسان اللاعبه . ينتظر قليلا ثم يرفع الترموميتر من الفم ويتم القراءة من الترموميتر .

٣ - قياس ضغط السدم :

- ١ - يجب أن تكون اللاعبه جالسة او نائمة فى وضع الاسترخاء
- ٢ - اربط جهاز الضغط على عضد اللاعبه باحكام، على ان يكون جهاز الضغط على نفس مستوى اللاعبه .

- ٣ - ابدأ الضغط على طرف الكف Cuff لكي يرتفع الزئبق في الانبوبة المدرجة لجهاز الضغط ، حتى يختفى النبض من الشريان Radial Artery في الساعد
- ٤ - ضع السماعة الطبية على الشريان الموجود اسفل العضد Brachial Artery
- ٥ - نبدأ في خفض الضغط بواسطة الـ Cuff حتى يبدأ الزئبق في الانخفاض في الانبوبة المدرجة لجهاز الضغط .
- ٦ - عند سماع صوت تدفق الدم في الشريان بواسطة السماعة الطبية نستطيع تحديد الضغط الانقباضي .
- ٧ - عند اختفاء هذا الصوت نستطيع تحديد الضغط الانبساطي (٤٠ : ٢٠٤)

٤ - قياس مستوى السكر في الدم :

- ضع نقطة من الدم (المراد معرفة نسبة السكر فيه) على المستطيلين في طرف شريط الاختبار .
- اتركها لمدة دقيقة كاملة على شريط الاختبار .
- ازل (امسح) الدم الموجود على الشريط بواسطة قطعة من القطن
- بعد مرور دقيقة اخرى اقرأ النتيجة بالمليجرام لكل ١٠٠مليتر (حسب تغير لون المستطيلين في طرف شريط الاختبار تكون نتيجة السكر في الدم)

(٤٠ : ٤٤٥)

بسم الله الرحمن الرحيم

مرفق (٥)

رئاسة الوزراء

هيئة الطاقة الذرية

استمارة / ١٤ هـ

بحوث

استمارة طلب نظائر مشعة

اسم الوحدة - او المعمل :
الكلية او المصلحة التابعة لها :
اسم المشرف المسئول فى المعمل :
نوع النظائر المشعة :
كميتها :
التاريخ المطلوب استلامها فيه :
عناوين البحوث التى تستعمل فيها هذه النظائر :

* بيانات عن الشحنة السابقة *

كمية المادة المشعة التى استهلكت :
فى الغرض الذى طلبت من اجله :
ما ضاع منها بالانحلال الاشعاعى :
ما تبقى منها :

تحريرا فى / / / ١٩م

المشرف د/
يعتمد/ رئيس المصلحة
الاسم :
التوقيع :

أوافق على استيراد الكمية المطلوبة للأمراض المذكورة على حساب الجهة
" الطالبة " وتضاف مخزنيا ونوافى بصورة من اذن الاضافة ١٣٢ ع ز ح وكذا
صورة من أمر التوريد او الاعتماد المستندى من البنك.

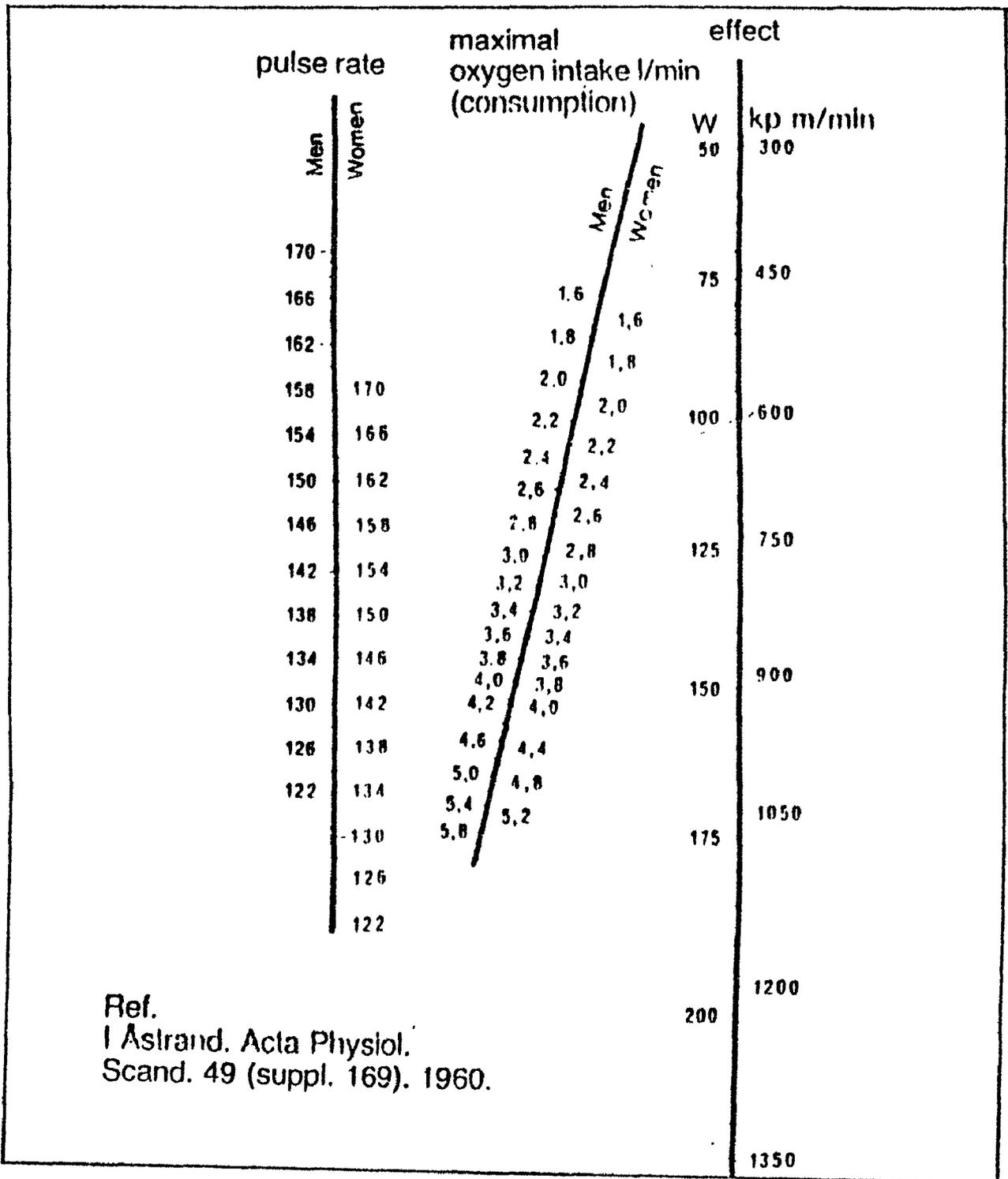
رئيس قسم النظائر المشعة

(٢) يكون حاصل على ترخيص مزاولة العمل بالنظائر المشعة سواء كان
مصريا أو اجنبيا.

(٢) عميد الكلية / رئيس مجلس الادارة / وكيل اول الوزارة / قائد
الوحدة العسكرية / مدير المستشفى العسكرى .

اسم :
توقيع :

NOMOGRAM



مرفق (٧)

MAXIMUM OXYGEN CONSUMPTION IN VARIOUS AGES

Table 1

	Age →								
	25	35	40	45	50	55	60	65	
1.5	1.6	1.3	1.2	1.2	1.1	1.1	1.0	1.0	
1.6	1.8	1.4	1.3	1.2	1.2	1.1	1.1	1.0	
1.7	1.9	1.5	1.4	1.3	1.3	1.2	1.2	1.1	
1.8	2.0	1.6	1.5	1.4	1.4	1.3	1.2	1.2	
1.9	2.1	1.7	1.6	1.5	1.4	1.4	1.3	1.2	
2.0	2.2	1.7	1.6	1.6	1.5	1.4	1.4	1.3	
2.1	2.3	1.8	1.7	1.6	1.6	1.5	1.4	1.4	
2.2	2.4	1.9	1.8	1.7	1.7	1.6	1.5	1.4	
2.3	2.5	2.0	1.9	1.8	1.7	1.6	1.6	1.5	
2.4	2.6	2.1	2.0	1.9	1.8	1.7	1.6	1.6	
2.5	2.8	2.2	2.1	2.0	1.9	1.8	1.7	1.6	
2.6	2.9	2.3	2.2	2.0	2.0	1.8	1.8	1.7	
2.7	3.0	2.4	2.2	2.1	2.0	1.9	1.8	1.8	
2.8	3.1	2.4	2.3	2.2	2.1	2.0	1.9	1.8	
2.9	3.2	2.5	2.4	2.3	2.2	2.1	2.0	1.9	
3.0	3.3	2.6	2.5	2.3	2.3	2.1	2.0	2.0	
3.1	3.4	2.7	2.6	2.4	2.3	2.2	2.1	2.0	
3.2	3.5	2.8	2.7	2.5	2.4	2.3	2.2	2.1	
3.3	3.6	2.9	2.7	2.6	2.5	2.3	2.2	2.1	
3.4	3.7	3.0	2.8	2.7	2.6	2.4	2.3	2.2	
3.5	3.9	3.0	2.9	2.7	2.6	2.5	2.4	2.3	
3.6	4.0	3.1	3.0	2.8	2.7	2.6	2.5	2.3	
3.7	4.1	3.2	3.1	2.9	2.8	2.6	2.5	2.4	
3.8	4.2	3.3	3.2	3.0	2.9	2.7	2.6	2.5	
3.9	4.3	3.4	3.2	3.0	2.9	2.8	2.7	2.5	
4.0	4.4	3.5	3.3	3.1	3.0	2.8	2.7	2.6	
4.1	4.5	3.6	3.4	3.2	3.1	2.9	2.8	2.7	
4.2	4.6	3.7	3.5	3.3	3.2	3.0	2.9	2.7	
4.3	4.7	3.7	3.6	3.4	3.2	3.1	2.9	2.8	
4.4	4.8	3.8	3.7	3.4	3.3	3.1	3.0	2.9	
4.5	4.9	3.9	3.7	3.5	3.4	3.2	3.1	2.9	
4.6	5.1	4.0	3.8	3.6	3.5	3.3	3.1	3.0	
4.7	5.2	4.1	3.9	3.7	3.5	3.3	3.2	3.1	
4.8	5.3	4.2	4.0	3.7	3.6	3.4	3.3	3.1	
4.9	5.4	4.3	4.1	3.8	3.7	3.5	3.3	3.2	
5.0	5.5	4.3	4.2	3.9	3.8	3.6	3.4	3.3	
5.1	5.6	4.4	4.2	4.0	3.8	3.6	3.5	3.3	
5.2	5.7	4.5	4.3	4.1	3.9	3.7	3.5	3.4	
5.3	5.8	4.6	4.4	4.1	4.0	3.8	3.6	3.4	
5.4	5.9	4.7	4.5	4.2	4.1	3.8	3.7	3.5	
5.5	6.0	4.8	4.6	4.3	4.1	3.9	3.7	3.6	
5.6	6.2	4.9	4.6	4.4	4.2	4.0	3.8	3.6	
5.7	6.3	5.0	4.7	4.4	4.3	4.0	3.9	3.7	
5.8	6.4	5.0	4.8	4.5	4.4	4.1	4.0	3.8	
5.9	6.5	5.1	4.9	4.6	4.4	4.2	4.0	3.8	
6.0	6.6	5.2	5.0	4.7	4.5	4.3	4.1	3.9	

CONDITION INDEX TABLE

Table 2

		Maximal oxygen uptake l/min																						
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0
50	Body weight, kg	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120
52		31	35	39	43	47	51	55	59	63	67	71	75	79	83	87	91	95	99	103	107	111	115	119
54		30	34	37	41	44	48	52	56	59	63	67	70	74	78	81	85	89	93	96	100	104	107	111
56		29	32	36	39	43	46	50	54	57	61	64	68	71	75	79	82	86	89	93	96	100	104	107
58		28	31	34	38	41	45	48	52	55	59	62	66	70	72	76	79	83	86	90	93	97	100	103
60		27	30	33	37	40	43	47	50	53	57	60	63	67	70	73	77	80	83	87	90	93	97	100
62		26	29	32	35	39	42	45	48	52	55	58	61	65	68	71	74	77	81	84	87	90	94	97
64		25	28	31	34	38	41	44	47	50	53	56	59	63	66	69	72	75	78	81	84	88	91	94
66		24	27	30	33	36	39	42	45	48	52	55	58	61	64	67	70	73	76	79	82	85	88	91
68		24	26	29	32	35	38	41	44	47	50	53	56	59	62	65	68	71	74	76	79	82	85	88
70		23	26	29	31	34	37	40	43	46	49	51	54	57	60	63	66	69	71	74	77	80	83	86
72		22	25	28	31	33	36	39	42	44	47	50	53	56	58	61	64	67	69	72	75	78	81	83
74		22	24	27	30	32	35	38	41	43	46	49	51	54	57	59	62	65	68	70	73	76	78	81
76		21	24	26	29	32	34	37	39	42	45	47	50	53	55	58	61	63	66	68	71	74	76	79
78		21	23	26	28	31	33	36	38	41	44	46	49	51	54	56	59	62	64	67	69	72	74	77
80		20	23	25	28	30	33	35	38	40	43	45	48	50	53	55	68	60	63	65	68	70	72	75
82		20	22	24	27	29	32	34	37	39	41	44	46	49	51	54	56	59	61	63	66	68	71	73
84		19	21	24	26	29	31	33	36	38	40	43	45	48	50	52	55	57	60	62	64	67	69	71
86		19	21	23	26	28	30	33	35	37	40	42	44	47	49	51	53	56	58	60	63	65	67	70
88		18	20	21	25	27	30	32	34	36	39	41	43	45	48	50	52	55	57	59	61	63	66	68
90		18	20	22	24	27	29	31	33	36	38	40	42	44	47	49	51	53	56	58	60	62	64	67
92		17	20	22	24	26	28	30	33	35	37	39	41	43	46	48	50	52	54	57	59	61	63	65
94		17	19	21	23	26	28	30	32	34	36	38	40	43	45	47	49	51	53	55	57	60	62	64
96		17	19	21	23	25	27	29	31	33	35	38	40	42	44	46	48	50	52	54	56	58	60	63
98		16	18	20	22	24	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61
100		16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

مرفق (أ)

CONDITION INDEX TABLE

Table 2

		Maximal oxygen uptake l/min																						
		1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0
50	Body weight, kg	32	36	40	44	48	52	56	60	64	68	72	76	80	84	88	92	96	100	104	108	112	116	120
52		31	35	39	43	47	51	55	59	63	67	71	75	79	83	87	91	95	99	103	107	111	115	119
54		30	33	37	41	44	48	52	56	59	63	67	70	74	78	81	85	89	93	96	100	104	107	111
56		29	32	36	39	43	46	50	54	57	61	64	68	71	75	79	82	86	89	93	96	100	104	107
58		28	31	34	38	41	45	48	52	55	59	62	66	70	72	76	79	83	86	90	93	97	100	103
60		27	30	33	37	40	43	47	50	53	57	60	63	67	70	73	77	80	83	87	90	93	97	100
62		26	29	32	35	39	42	45	48	52	55	58	61	65	68	71	74	77	81	84	87	90	94	97
64		25	28	31	34	38	41	44	47	50	53	56	59	63	66	69	72	75	78	81	84	88	91	94
66		24	27	30	33	36	39	42	45	48	52	55	58	61	64	67	70	73	76	79	82	85	88	91
68		24	26	29	32	35	38	41	44	47	50	53	56	59	62	65	68	71	74	76	79	82	85	88
70		23	26	29	31	34	37	40	43	46	49	51	54	57	60	63	66	69	71	74	77	80	83	86
72		22	25	28	31	33	36	39	42	44	47	50	53	56	58	61	64	67	69	72	75	78	81	83
74		22	24	27	30	32	35	38	41	43	46	49	51	54	57	59	62	65	68	70	73	76	78	81
76		21	24	26	29	32	34	37	39	42	45	47	50	53	55	58	61	63	66	68	71	74	76	79
78		21	23	26	28	31	33	36	38	41	44	46	49	51	54	56	59	62	64	67	69	72	74	77
80		20	23	25	28	30	33	35	38	40	43	45	48	50	53	55	58	60	63	65	68	70	72	75
82		20	22	24	27	29	32	34	37	39	41	44	46	49	51	54	56	59	61	63	66	68	71	73
84		19	21	24	26	29	31	33	36	38	40	43	45	48	50	52	55	57	60	62	64	67	69	71
86		19	21	23	26	28	30	33	35	37	40	42	44	47	49	51	53	56	58	60	63	65	67	70
88		18	20	21	25	27	30	32	34	36	39	41	43	45	48	50	52	55	57	59	61	63	66	68
90		18	20	22	24	27	29	31	33	36	38	40	42	44	47	49	51	53	56	58	60	62	64	67
92		17	20	22	24	26	28	30	33	35	37	39	41	43	46	48	50	52	54	57	59	61	63	65
94		17	19	21	23	26	28	30	32	34	36	38	40	43	45	47	49	51	53	55	57	60	62	64
96		17	19	21	23	25	27	29	31	33	35	38	40	42	44	46	48	50	52	54	56	58	60	63
98		16	18	20	22	24	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61
100		16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60

مرفق (٩)

HOW TO ESTIMATE YOUR CONDITION ACCORDING TO THE CONDITION INDEX

Table 3

Age	Very poor	Poor	Average	Good	Very good
women					
20-29	28	29-34	35-43	44-48	49
30-39	27	28-33	34-41	42-47	48
40-49	25	26-31	32-40	41-45	46
50-56	21	22-28	29-36	37-41	42
men					
20-29	38	39-43	44-51	52-56	57
30-39	34	35-39	40-47	48-51	52
40-49	30	31-35	36-43	44-47	48
50-59	25	26-31	32-39	40-43	44
60-69	21	22-26	27-35	36-39	40

Ref. 1 Astrand Acta Physiol. Scand. 49 (suppl. 169). 1960

Helwan University
Faculty of Physical Education
For Girls
Cairo

**"THE EFFECT OF PHYSICAL EFFORT ON THE BLOOD
LEVELS OF CORTISOL AND CORTICOTROPIN
HORMONES FOR SPRINTING AND
RUNNING FEMALES"**

PRESENTED BY

SOMIA MAHMOUD MANSOUR EL ARABI

Assistant Lecturer at Track and Field Events Department

Submitted in Partial Fulfillment of the Requirements for the
Doctor Degree in Physical Education

SUPERVISED BY

Prof. Dr. NABILA EL-SAYED MANSOUR

Head of Track and Field Events Department

Faculty of Physical Education for Girls

Helwan University

Prof. Dr. HOSNY AHMED ABD EL RAHMAN

Dean of Faculty of Medicine, Benha

Zagazig University

Prof. Dr. NABILA MOHAMED ABO RAWASH

Prof. of Track and Field Events Department

Faculty of Physical Education for Girls

Helwan University

Dr. ESAM EL-NADI

Assistant Prof. of Medicine Assay

Faculty of Medicine

Cairo University

Cairo
1413 - 1992

SUMMARY

Title of the Research :

" The Effect of Physical Effort on the Blood levels of Cortisol and Corticotropin Hormones for Sprinting and Running females " .

Introduction :

Since the beginning of the 20th century uptill now, the researchers were intersted in the study of the effect of physical activity on the blood, as a result, of these studies many informations had been known.

The vital function of the blood in maintaining life during normal life circumstances becomes more important during the stress of the physical activity due to the increased demand of the muscles to the oxygen which is carried to it by blood, also the accumulated metabolites such as carbon dioxid, lactic acid and others are carried out the muscles by the blood, so the muscles can continue its performance efficacilly, suffeciently and resistance against fatigue, That is why the researcher are intersted in these studies.

Studying the effect of physical activity on the various hormones is the recent trend.

The researcher noticed that the hormoneslevel of the female athletes of track and field events has not been studied in Egypt, so the researcher decided carryout this research.

The importance and the Need of the Research:

The researcher has noticed the low level of sprinting and running females, while she was student, practicing track and field events on a high sports level, teaching and training the sprinting and running females of the National club.

Is this low level due to bad contents of training units bad contents of training session? bad choice of the players ? bad competition timing ? or bad preparation of the trainers.

To know the cause of the low level, the researcher begin this research trying to identify the effect of Physical Effort on the blood levels of cortisol and corticotropin hormones of sprinting and running females, it is known that both hormones have a great effect on the results of these events.

Aims of the Research

This research aims to identify the effect of the physical effort of the sprinting and running females on the blood level of cortisol and corticotropin.

Questionnaire of the research:

The research tries to answer the following questions:

- 1- Are there differences on the blood levels of ACTH and cortisol in sprinting and running females before effort?
- 2- Are there differences on the blood levels of ACTH and cortisol in sprinting and running females after effort ?

- 3 - Are there differences on the blood levels of Acth and cortisol in sprinting females before and after effort?
- 4 - Are there differences on the blood levels of ACTH and cortisol in Running females before and after effort?
- 5- Is There correlation between ACTH and cortisol blood levels in sprinting females before or after effort ?
- 6- Is there correlation between ACTH and cortisol blood levels in Running females before or after effort ?

The Theoretical Frame of the Research:

The Frame discussed the basic subjects of the research, it consists of :-

- 1- The Endocrine Glands system.
- 2- Kinds of hormones.
- 3- Regulation of Hormones secretion.
- 4- The Endocrine Glands and physical training.
- 5- The Role of Endocrine Glands on adaptation of the body to physical effort.
- 6- Supra renal Gland.
- 7- The cortisol hormone.
- 8- Effect of physical effort on cortisol level.
- 9- The pituitary Gland.
- 10- Corticotropin Hormone (ACTH).

11- The function of ACTH hormone .

12- Effect of physical effort on ACTH level.

Previous Studies :

In this chapter, the previous studies that related to the effect of physical activity on the steroid hormones has been discussed, commented upon, the present research has avoided its drawbacks.

Method of the Research :

The experimental method has been used by applying before and after measurement which is suitable for the nature of this research.

Sample of the Research:

20 female of National Egyptian team of Track and Field events divided into 2 groups :

GP.I 10 short distance female (sprinting).

GP.II 10 Long distance female (running) .

Research Tools:

Bicycle ergometer machine was used, Body weight and height, pulse rate before and after effort, body temperature, blood pressure, blood sugar level, maximum oxygen consumption, the physical condition has been measured, Finally cortisol and corticotropin level in blood.

Procedures of the Research:

- A. Sheets are designed to collect data.
- B. Assistants has been Selected and Trained.
- C. Provisional expermente.
- D. The main expermente : 5 ml venous blood are with drawn from each subject before and immediately after the effort. Using bicycle ergometer at work load of 100% maximal oxygen uptake 1/min up to exhaustion for atotal period 15 minutes with 120 watt.

The blood recieved is centrefuged to separate the plasma, and stored at -20°C until hormonal assay, which are determined by Radio Immuno Assay (RIA) method, The commercial of kits purchased from Diagnostic products corporation (DPC) los Angeles, Ca, USA.

- E. Tabulating the data after its collection.
- F. Statistical analysis: The data are analysed statistically by using means, standard deviations, correllation coeffecint, and "T" values, the researcher used $P < 0.05$.

Findings:

According to the aims, subjects, method, statistical analysis and results of this study, the researcher finds the following :

- 1- There was not significant differences on the blood cortisol level between sprinting and running female athletes before effort.

- 2- There was not significant differences on the blood corticotropin level between sprinting and running female athletes before effort.
- 3- There was not significant differences on the blood cortisol level between sprinting and running female athletes after effort.
- 4- There was not significant differences on the blood corticotropin level between sprinting and running female athletes after effort.
- 5- There was statistical significant differences on the blood cortisol level among sprinting female athletes before and after effort.
- 6- There was statistical significant differences on the blood corticotropin level among sprinting female athletes before and after effort.
- 7- There was statistical significant differences on the blood cortisol level among running female athletes before and after effort.
- 8- There was statistical significant differences on the blood corticotropin level among running female athletes before and after effort.
- 9- There was no correlation between cortisol and corticotropin blood levels among sprinting female athletes before effort.
- 10- There was no correlation between cortisol and corticotropin blood levels among running female athletes before effort.

- 11- There was no correlation between cortisol and corticotropin blood levels among sprinting female athletes after effort.
- 12- There was significant correlation between cortisol and corticotropin blood levels among running female athletes after effort.

Recommendations :

According to the results of this research, the researcher recommends the following :

- 1- A study to measure cortisol and corticotropin blood levels of sprinting and running male and female athletes during the periods of training season must be carried out.
- 2- A study to measure cortisol and corticotropin blood levels of male and female players of Track and Field events after the race must be done.
- 3- To observe the cortisol and corticotropin blood levels of sprinting and running female players during the periods of training season.
- 4- The sprinting and running female athletes must administer excess carbohydrates before competition to avoid hypoglycaemia (decrease of blood glucose level) .
- 5- Attention for regular measuring of cortisol and corticotropin blood levels of sports man and women on rest and after training to be able to give the suitable doses of training to utilize their energy to reach the maximum possible sports level.

- 6- Researchs to determine the time needed for hormones (specially the cortisol and ACTH) to return their normal levels must be done.
- 7- Scanning of the Endocrine Glands activity specially the supra-renal and pituitary Glands at the time of selecting the beginners in different activities to save time, cost, effort wasted in training unfit athletes from endocrinal point of view.
- 8- The trainers must Plan training programs for sprinting female players, having long distance training with moderate intensity.
- 9- Using different intensities and periods, other studies must be done to assess the effect of each load on the blood hormones levels.
- 10- The hormones level of the other glands of athletes in other sport activities must be studied to detect any relationship between the level of every certain hormone and the kind of sport.
- 11- The effect of psychological stress of physical activity on the blood hormones level must be studied.
- 12- The effect of the contents and degrees of training load on the blood hormones level must be studied.
- 13- Care must be taken for establish an International Laboratory for hormonal assay of players to do the Clinical Tests for the National and international players regularly.