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(Stegmann, Kindermann, and

Schnabel, 1981)

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Aerobic Thershold

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Anaerobic Thershold

(Urhausen, Coen, Weiler, and Kindermann, 1993;

.Urhausen, Weiler, Coen, and Kindermann, 1994)

Anaerobic

Individual Thershold

(Coen, Urhausen,
Agular, Weiler, and Kindermann, 1994; McLellan and
Jacobs, 1993; Stegmann et al., 1981; Urhausen, Coen et
.al., 1993)

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Growth hormone

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Stroble,) Strobel et al. 1999

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Urhausen. et 1994

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1993; Stegmann et al., 1981; Urhausen, Coen et al.,

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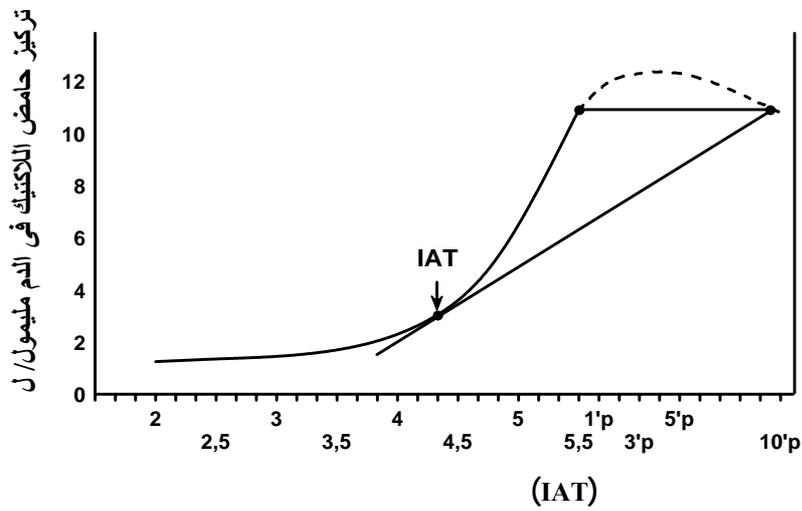
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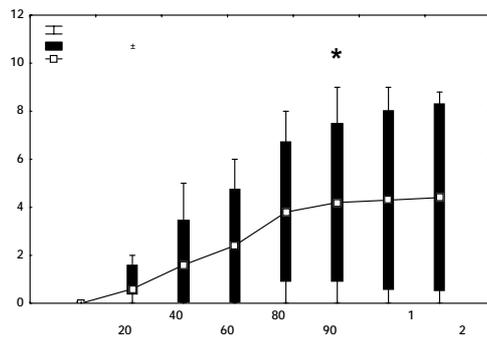
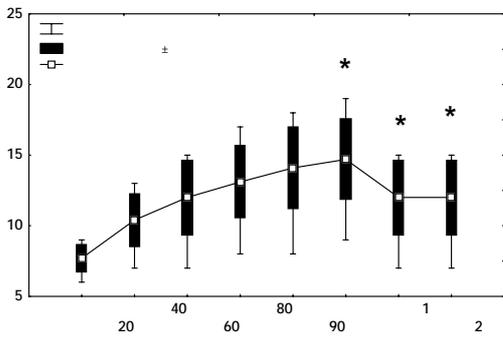
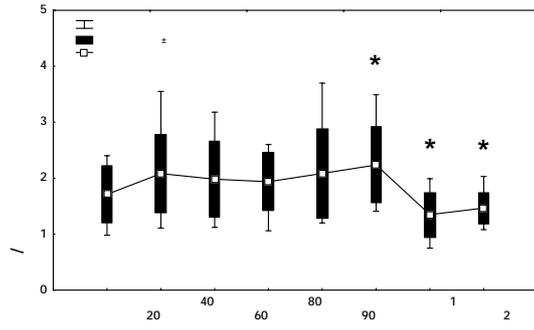
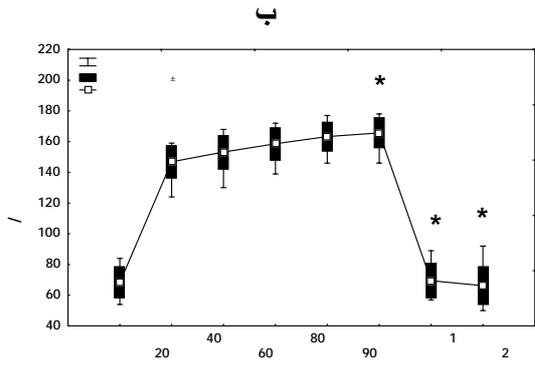
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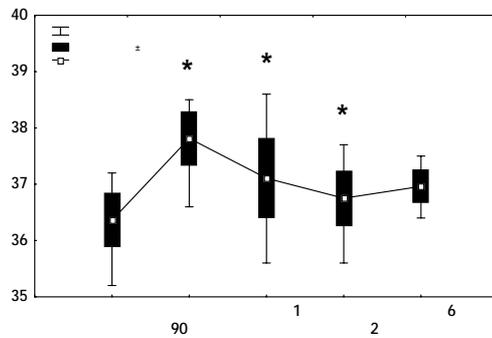
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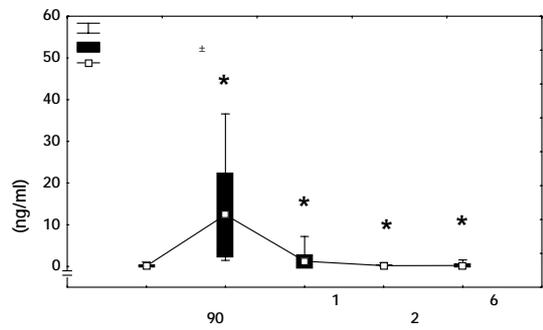
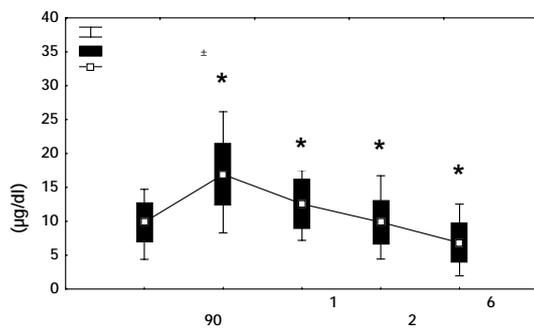
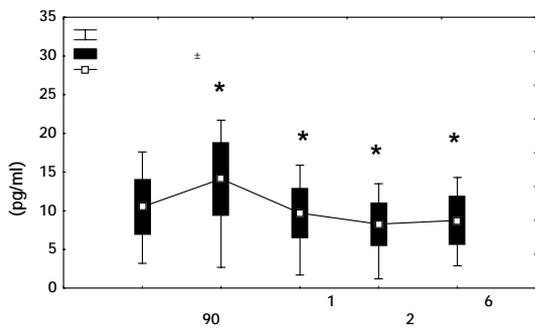
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| 5.45 | 6.08 | 6.78 | " " |
| 1.23 | 9.71 | 12.55 | |
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| ↓ %90 | ↓ %31 | ↓ %25 | | |
| * 5.81 | * 8.18 | * 5.79 | " " | |
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| 0.21 | 2.76 | 3.23 | | |
| ↓ %98 | ↓ %41 | ↓ %42 | | |
| * 5.54 | * 3.00 | * 4.99 | " " | |
| 0.22 | 8.75 | 6.83 | | 6 |
| 0.38 | 3.09 | 2.93 | | |
| ↓ %98.5 | ↓ %38 | ↓ %59 | | |
| * 5.42 | * 6.77 | * 7.60 | " " | |

Gonzalez- (Shephard, 1998
 Rowell (Gonzalez-Alonso et al., 1999) Alonso
 (Rowell, 1986) Urhausen)
 . (and Kindermann, 1992b

Bergman, Bessler, Salman, and Djaldetti, 2003;)
 McClelland, Craig, Dhekney, and Dipardo, 2006; Coen et al., 1994; Stegmann and Kindermann, 1982;)
 .(Yamazaki and Hamasaki, 2003 %80 .(Urhausen et al., 1994

Petrofsky and)
 Laymon, 2000; Urhausen, Weiler, and Kindermann, Coen, Schwarz, Urhausen,)
 (Wilmore, 1999) Wilmore (1993 (and Kindermann, 1991; Urhausen, Coen et al., 1993
 .(Gabriel, 1999)

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I. K. Brenner,)
 Zamecnik, Shek, and Shephard, 1997; Febbraio, Snow, (3) (- 2)
 Stathis, Hargreaves, and Carey, 1994; Florez-Duquet and ()
 McDonald, 1998; Fothergill, Taylor, and Hyde, 1998;
 (Geladas and Banister, 1988

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 I. Brenner, Shek, Zamecnik, and) Brenner

(O'Brien, 2000; Castellani, 2001)

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(Coen et al., 1991) Coen

(Kindermann and Coen, 1998) Kindermann

Urhausen, Coen et al., 1993; Urhausen et al.,) Urhausen

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.(O'Brien et al., 2000)

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.(Proietto, and Hargreaves, 1998; Febbraio et al., 1994

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Sakamoto, Wakabayashi, Yoshimoto, Masui, and

Katsuno, 1991; Vanhelder, Radomski, Goode, and Casey,

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.(Wilmore, 1999)

Armstrong,) Armstrong

(Friden and Lieber, 1992) Friden (1990

(Kuipers, 1994) Kuipers

Mandel, Kranias, Grassi de Gende, Sumida, and)

.(Schwartz, 1982; Steele and Duke, 2003

Faller, 1999;)

(Urhausen, Gabriel, and Kindermann, 1995

Castell

(Kenney, 1997) Kenney (Castell et al., 1997)

Kruk, Pekkarinen, Harri, Manninen, and) Kruk

Langberg, Olesen,) Langberg (Hanninen, 1990

(Gemmer, and Kjaer, 2002

Esler et al., 1990; Himms-Hagen, 1996; Marino,)

(Sockler, and Fry, 1998; Wittert et al., 1992

(Cern Temperature)

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(Coen et al., 1991; Urhausen et al., 1994)

IAT %80

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Christensen, Jorgensen, Moller, and Orskov, 1984;)

Cross, Radomski, VanHelder, Rhind, and Shephard, 1996; Jorgensen et al., 2003; Moller et al., 1989; Weeke Raynaud (and Gundersen, 1983

Raynaud, Capderou, Martineaud, Bordachar, and)

(Durand, 1983

(Moller et al., 1989) Moller

(Powers, Howley, and Cox, 1982) Powers

Bonilla-)

Jaime, Retana-Marquez, Vazquez-Palacios, and

(Velazquez-Moctezuma, 2003

Gabriel, Schwarz, Steffens, and) Gabriel

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(Jorgensen et al., 2003

(IAT)

(Coen et al., 1991) Coen

(Urhausen et al., 1994)Urhausen

%85

IAT %95 %90

IAT %100

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Effect of Individual Anaerobic Threshold on Physiological Responses and Levels of Cortisol, Testosterone and Growth Hormone

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ABSTRACT

The study of hormonal alterations due to exercises of growing interest because of the implications for adaptation, performance, and health. This study investigated changes in Hormones level in response to exercise at the Individual Anaerobic Threshold (IAT) and recovery time of these Hormones. 17 healthy moderately fit young men (Aged 26 ± 3 yr). After the determination of the individual anaerobic threshold (IAT), all subjects had to run on treadmill at 80% IAT (2.7 ± 0.4 m/s) for 90min. The exercise was continued by Control parameters heart rate, lactate concentration, pain perceive, fatigue scale, body temperature, and hormone parameters was examined with Cortisol, Testosterone and growth hormone. Blood was taken 30min before, immediately after exercise and 1, 2, 6. The exercise leads to a clear increase of the heart rate, lactate concentration, pain perceive, fatigue scale, body temperature ($p < 0.05$). After standardised exercise a significant rises was found in the Cortisol 71%, Testosterone 116% and growth hormone concentration 34% ($p < 0.05$). After 1hp exercise Significant lower levels was found ($p < 0.05$) of the Cortisol 25%, Testosterone 31% and growth hormone concentration 90%. After 2hp exercise Significant lower levels was found ($p < 0.05$) of the Cortisol 42%, Testosterone 41% and growth hormone concentration 98%. After 6hp exercise Significant lower levels was found ($p < 0.05$) of the Cortisol 59%, Testosterone 38% and growth hormone concentration 98.5%. As a result endurance exercises at the Individual Anaerobic Threshold (IAT) lead to clear increase in Hormones level. On the other hand the growth hormone was faster recovered than the other Hormone.

Keywords: Individual Anaerobic Threshold, Hormones Level, Lactate Concentration.

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