

—
:
/ / :
/ / :

β

—
—
—¹

() **β** ,
(/ ± /) (/ ± /)

t

(P< /)

(P= /)

β



.()

.()

.()

.()

.()

.()

.()

.()

...	β
	,
	.()
()	.
,	()
	.()
.()	,
,	.()
	.
	.()
,	,
,	.()
.()	.()
,	,
)	.()
,	,
()	()
,	,
,	,
()	,

1 - Anne Mc Tiernan et al
2 - Frish RE
3 - G Wyshak

(/ ± /)

(/ ± /)

(Pg/ml)

()

Omron (Body logic/body fat and lyzer)

)

t

(

1 - Electrochemiluminescence

...

β

(n=)		(n=)		/
	SD		SD	
/	/	/	/	()
/	/	/	/	()
/	/	/	/	(%)
/	/	/	/	(Kg/m ²) BMI
/	/	/	/	(WHR)
/	/	/	/	(Pg/ml) -

=	=	
%	%	()
%		()
%		()
	%	
%		
%		
%	%	

t

()

β

(n=)			(n=)		()
		SD		SD	
/	/	/	/	/	()
/	/	/	/	/	()
/*	/	/	/	/	(%)
/	/	/	/	/	(Kg/m ²) BMI
/	/	/	/	/	(WHR)
/	/	/	/	/	(Pg/ml) -

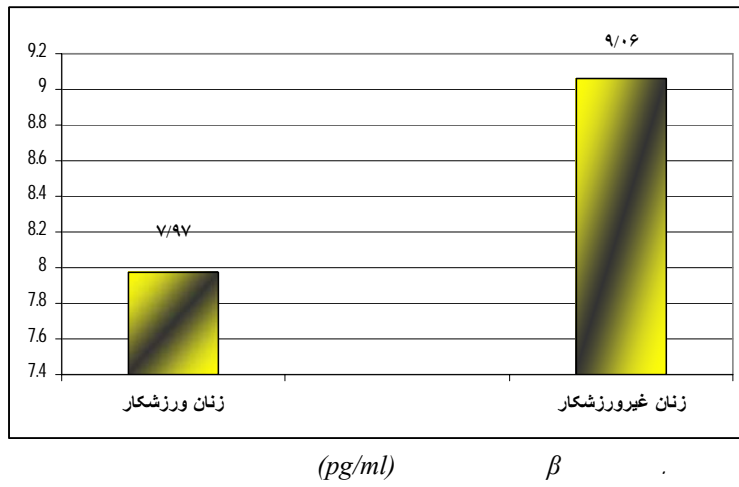
t / =*

β

(=)		()
P= /	r= - /	()
P= /	r= /	()
P= /	r= /	(%)
P= /	r= /	(Kg/m ²) BMI
P= /	r= /	(WHR)

β

(P < /)



()
17β-Estradiol . / ()
()

1 - Genotoxic

.()

.()

()

BMI

.() (**BMI**<)

BMI

()

.()

()

.()

1 - Anne Mc Tiernan et al

2 - Timothy J Key et al

...

β

(/ \pm /)

(/ \pm /)

.()

.()

.()

()

.()

.()

()

)

(

-
- 1 - Pia et al
 - 2 - FSH Hormone
 - 3 - LH Hormone
 - 4 - SHBG



.()

()

.()

()

.()

".() .

-

".()

T

".() .

".() .

()

".() .

7. Anne Mc Tiernan et al. (2003). "Adiposity and sex hormones in postmenopausal breast cancer survivors". *J of clinical oncology*, Vol . (21), PP:1691-1966.

8. Anne Mc Tiernan (2003). "Behavioral risk factors in breast cancer: Can risk be modified?" *The oncologist*. Vol(8), PP:326-336.

9. Anne McTiernan et al. (2004). "Effect of exercise on serum androgens in postmenopausal women: a 12-month randomized clinical trial". *Cancer epidemiology biomarkers and prevention*. Vol. 13, PP:1099-1105.

10. Anne McTiernan et al. (2004). "Effect of exercise on serm estrogens in postmenopausal women: a 12-Month randomized clinical trial". *Cancer Research* , Vol (64), PP:2923-2928.

11. Ann T. Bentz, et al. (2005). "The relationship between physical activity and hydroxyestrone and 16-alpha-hydroxyestrone, and the 2/16 ratio in premenopause women (united states)." *Cancer Causes Control*, Vol (16) ; PP: 455-61.

12. Charlotte Atkinson, Johanna W. Lampe, et al. (2000). "Effect of moderate intensity exercise intervention on estrogen metabolism in postmenopausal women". *Cancer Epidemiology biomarkers & Prevention*. Vol (13), PP:868-874.

13. Frish RE, Wysha . (1987). "Lower lifetime occurrence of breast cancer and cancers of the reproductive system among former college athletes". *Int J Fertil*. Vol(32) : PP:217-225.

14. G Wyshak, RE Frisch, (2000). "Breast cancer among former college athletes compared to nonathletes: A 15-year follow-up". *British Journal of cancer* , Vol (82), PP: 726-730.

15. Lou Fintor (1999). "Exercise and breast cancer risk : Lacking consensus". *J Natl Cancer Inst*. Vol (91). PP:825-827.

16. Pia K. Verkasalo et al. (2001). "Circulating levels of sex hormones and their relation to risk factors for breast cancer : a cross – sectional study in 1092 pre-and postmenopausal women (United kingdom). *Cancer Causes and Control* . Vol (2), PP:47-59.

17. Ruth C Travis and Timothy J Key; (2003). "Estrogen exposure and breast cancer risk". *Breast cancer Res, Vol (5), PP:239-247.*

18. Timothy J.Key et al. (2003). "Body mass index, serum sex hormones, and breast cancer risk in postmenopausal women". *J of National cancer Institute. Vol (95). PP:1218-1226.*

19. T J Key; (1999). "Serum estradiol and breast cancer risk". *Endocrine-related cancer, Vol (6), PP: 175-180.*