**Presentation Title**

**Association of some dietary ingredients, vitamin D, estrogen, and obesity polymorphic receptor genes with bone mineral density in a sample of obese Egyptian women**

**Presenter Name and Co-author names**

**Aya Khalil**

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**Abstract:**

Short Description of the research work which will be discussed during the presentation (about 250 -300 words)

**Abstract Background**: Although many environmental factors play an important role in bone mass density (BMD) variation, genetic influences account for 60–85% of individual variance. The aim of this study was to find the interaction between some dietary ingredients, vitamin D, estrogen, and obesity polymorphic receptor genes, among a sample of obese Egyptian women. This was a cross sectional study included 97 women (aged 25–60 years). Data on anthropometry, dietary intake, BMD, biochemical, and genetic analyses were collected.

**Results:** Osteoporosis was high among women had dominant Taq1 vitamin D receptor gene while osteoporosis was less common among the homozygous Apa1 receptor gene women. Both genes in their two forms did not show any effect on serum vitamin D. Heterozygous types of osteoporotic women carried both genes revealed a slight but significant decrease in level of serum calcium. Xba1 estrogen receptor gene was identified only in a homozygous type while the heterozygous Pvu11 estrogen receptors gene has been identified among both osteoporotic and non-osteoporotic women, this gene was associated with higher BMI in both groups compared to the homozygous receptor gene. Mutant types of genotype FTOrs99 and FTOrs80 obesity receptors genes were less common (4.44%, 11%) among participants. Both of these genes were associated with the highest value of BMI and caloric daily intake, fat, and saturated fatty acid that were more prominent among osteoporotic women.

**Conclusion:** There is significant association between vitamin D, estrogen, obesity receptors genes, special nutrients, and osteoporosis. Increased BMI, calories, and fat intake lead to rise of genetic predisposition and susceptibility to osteoporosis.

**Keywords:** Osteoporosis, Vitamin D receptors genes, Estrogens receptors genes, Obesity receptors genes, Dietary intake

**Biography of presenting author** (should not exceed 100 words)

Dr. Aya studied Medicine at (Kasr El-Einy) Cairo University, Egypt and graduated as MBBCH in 1998. She then worked at National Research Centre (NRC), Cairo, Egypt. She received her PhD degree in 2013 at the same institution. She then obtained the position of an Assistant Professor at the NRC. She published around 23 research articles in different respectable International journals. She also is an Editor and reviewer in International journals.

(Example: Dr. Michael studied Physics at the University of Rochester, USA and graduated as MS in 1992. He then joined the research group of Prof. John at the Institute of Physics, University of Cambridge. He received his PhD degree in 2004 at the same institution. After one year postdoctoral fellowship supervised by Dr Robert at the Nano-Optics Laboratory, France He obtained the position of an Associate Professor at the NRC. He has published more than 95 research articles in MDPI journals.)

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