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## Relation of bone mass to vitamin D receptor gene polymorphism and lifestyle factors (nutrition and exercise) in Japanese female college students

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The aim of the present study was to identify Vitamin D Receptor (VDR) gene polymorphism and life-style factors (nutrition and exercise) associated with bone mass in Japanese female college students. The subjects comprised 317 female college students aged between 20 and 24 all of whom were living in the Kanto region at the time of the study. Bone mass measurement was based on Qualitative Ultra Sound (QUS). The subjects were asked what type of sport they used to play in their junior high school and high school days. The subjects' current nutrient intake was surveyed using food frequency questionnaire based on food groups (FFQG) ver. 3.0 software, an add-in software of Excel Eiyoku-kun (Kenpakusha). The daily intake of three nutrients (calcium, vitamin D, and vitamin K) was calculated per 1,000 k.cal. Gene polymorphism for the restriction enzyme TaqI digestion site (rs731236) were detected by real-time PCR using TaqMan probes. No significant difference in the bone mass was observed between the VDR polymorphisms (TT versus TC + CC). The present study did not demonstrate any correlation between VDR polymorphism and bone mass. Similarly, no correlation was observed between nutritional intake and bone mass. Meanwhile, the results of multiple linear regression analysis ascertain that high BMI levels and the experience of high-impact exercise during junior high school or high school have an independent positive effect on bone mass. These results suggest that BMI and exercise are likely high to be important factors in increasing bone mass.

### Biography

Yoichi Tachi has completed his PhD from University of Tsukuba in Japan. He is Associate Professor at Laboratory of Nutritional Physiology, Tokyo Kasei University. He has published more than 35 papers in reputed journals.

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