Vitamin E prevents steroid-induced osteonecrosis in rabbits. M. Kuribayashi, M. Fujioka, K. A. Takahashi, Y. Arai, M. Ishida, T. Goto, and T. Kubo, *Acta Orthop.*, **81**, 154–160 (2010).

BACKGROUND AND PURPOSE: Prevention of osteonecrosis after corticosteroid administration would be important. We examined the potential of vitamin E (α-tocopherol) to reduce the incidence of corticosteroid-induced osteonecrosis in an animal model.

METHODS: Japanese white rabbits were divided into 2 groups; the control group was fed a normal diet and the experimental group was fed α-tocopherol-supplemented diet in which α-tocopherol (600 mg/kg diet) was added to the normal diet. To induce osteonecrosis, high-dose methylprednisolone acetate (MPSL) (20 mg/kg body weight) was injected once into the right gluteus medius muscle of all rabbits. 4 weeks after the injection of MPSL, the presence or absence of osteonecrosis of bilateral femurs was examined histopathologically. The tocopherol/cholesterol ratios were calculated. The plasma levels of thiobarbituric acid-reactive substances (TBARS) were measured.

RESULTS: α-tocopherol-supplemented diet reduced the incidence of osteonecrosis, which developed in 14 of 20 rabbits in the control group and 5 of 21 rabbits in the experimental group ($p = 0.004$). The tocopherol/cholesterol ratio was higher in the experimental group than in the control group after the α-tocopherol administration. The plasma TBARS level was lower in the experimental group than in the control group at 4 weeks after the MPSL administration.

INTERPRETATION: Our findings may offer a new approach for the prevention of corticosteroid-induced osteonecrosis.