The objective of the study is to investigate if unprotected long term lifetime sun exposure is associated with prevalence of diabetes. We analyzed the Korean National Health and Nutrition Survey IV from 2010 to 2011. Participants aged 19 years or older were asked about the time they have been exposed to direct sun light without wearing sunglasses or caps per day on average since 19 years old. We categorized participants into three groups with different levels of lifetime sun exposure time and explored its association with diabetes prevalence. The risk of diabetes was higher in participants with unprotected sun exposure time longer than 5 hours per day with odds ratio of 2.39 (95% CI 1.75-3.25) and the association remained significant after adjusting for multiple risk factors. The duration of sun exposure was also positively associated with systolic blood pressure, fasting glucose, white blood cell count, ferritin, and aspartate aminotransferase (AST) after adjusting for age and sex. At body composition analysis, sun exposure was associated with reduced peripheral adiposity or percent body fat but increased central obesity and the possibility of increase in visceral adiposity. In conclusion, excessive unprotected sun exposure is associated with increased prevalence of diabetes and increased central obesity. And our study provides a cutoff for upper limit of sun exposure and suggests unprotected daily sun exposure for more than five hours should be avoided to prevent diabetes. The underlying mechanism may be different by gender with increased central obesity in women and beta cell dysfunction in men.