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P188. Two seasons of the level of calcidiol in pregnant women of St. Petersburg.

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Introduction and Goals Synthesis of vitamin D is possible when exposed to UV radiation with a wavelength of 290-315 nm. This part of the spectrum is absorbed by the upper layers of the atmosphere if the sun does not rise high above the horizon, which happens for most of the year in "high" latitudes. In addition, this radiation is absorbed in a dusty air environment of a megacity. St. Petersburg - the largest metropolis in the world with a population of more than 5 million people, located almost 60 parallel. It seems necessary to determine the duration of the calendar period when it is possible to synthesize vitamin D under the influence of natural conditions. Methods The study involved 179 women aged in the first trimester of pregnancy. All the women were given a daily 500 IU of cholecalciferol in the composition of multivitamin complexes. The blood sampling was carried out at different times of the year for 2 years. Bound 25(OH)D in blood plasma was measured. The data obtained were analyzed in terms of the following assumptions about the model change indicators 25(OH)D, depending on the season: Dt = TCt + St + et Where TCt is the trend (constant throughout the year), St is the seasonal component, et is the normal noise, t is the time in months. Results The total variability of the values of calcidiol is not due to the trend, but due to the seasonal component. The seasonal difference of calcidiol fluctuates above and below zero on the graph of the seasonal component, with the "summer vitamin D" season comprising the months from June to September, and the "winter vitamin D" season from October to May. The obtained conclusion was confirmed by means of one-way analysis of variance. The significance of the difference according to the F-criterion was: p <0.0001. Conclusions In St. Petersburg, there are seasonal variations in the concentration of 25 (OH) D in pregnant women. The increase in the production of calcidiol occurs from June to September, and the decrease from October to May. These fluctuations can be caused by the influence of the seasonal factor. The daily dose of 500 IU of cholecalciferol is not enough to compensate for the effect of the seasonal factor on fluctuations in the concentrations of calcidiol.

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