

Background

Świętokrzyski Biobank realize 3 screening projects:

"Determination of the lipid profile of the inhabitants of Świętokrzyskie voivodeship". Its main purpose is to detect disorders and deviations in the early stage, among a diverse group of people. Conducting research on a large number of participants will create a lipid profile of the region's population. This will enable the identification of high-risk groups and the early detection of possible irregularities.

The project "Screening for celiac disease of group Świętokrzyskie voivodeship inhabitants" was created due to the lack of keeping the national register of people suffering from celiac disease and the fact that the total number of patients with celiac disease is not fully known.

Last project is "Assessment of vitamin D concentration in blood, among inhabitants of the Świętokrzyskie voivodeship". The obtained results will allow to determine the factors affecting the level of vitamin D and provide information on the extent to which vitamin D deficiency affects residents of the Świętokrzyskie voivodeship.

Methods

"Determination of the lipid profile of the inhabitants of Świętokrzyskie voivodeship". The patients were tested for cardiovascular biomarkers (total cholesterol, triglycerides, HDL, LDL). Blood collected for the clot was used to obtain serum, and then the lipidogram levels were determined on the Cormay Accent 200 biochemical analyzer. LDL cholesterol was calculated according to Friedewald's formula.

"Screening for celiac disease of group Świętokrzyskie voivodeship inhabitants". The study used in vitro diagnostic enzyme immunoassays (ELISA) designed for semi-quantitative determination of specific autoantibodies in the IgA and IgG class against tissue transglutaminase tTG (AUTOSTAT II tTG by Hycor Biomedical) and for the quantitative determination of specific autoantibodies in the IgA and IgG class against deamidated gliadin antigliadin peptides -DGP (BlueWell Deamidated Gliadin IgA / IgG ELISA by D-tek). The absorbance was measured at 450 nm on a Tecan infinite® M200 plate reader.

"Assessment of vitamin D concentration in blood, among inhabitants of the Świętokrzyskie voivodeship". The tests are performed using the ELISA method with the use of the INFINITE M200PRO device by TECAN. Determinations are performed using the BIOHIT TOTAL 25OH VITAMIN D kit by BIOHIT HealthCare.

Results

"Determination of the lipid profile of the inhabitants of Świętokrzyskie voivodeship".

For 48% of the study group, the level of total cholesterol was beyond the accepted norm, which accounts for almost half of the study group. Most of the participants of the study had normal triglyceride levels, which accounts for 79% of the study group.

It was shown that 46% of the study group had too low HDL cholesterol. On the other hand, 48% have too high level of LDL cholesterol.

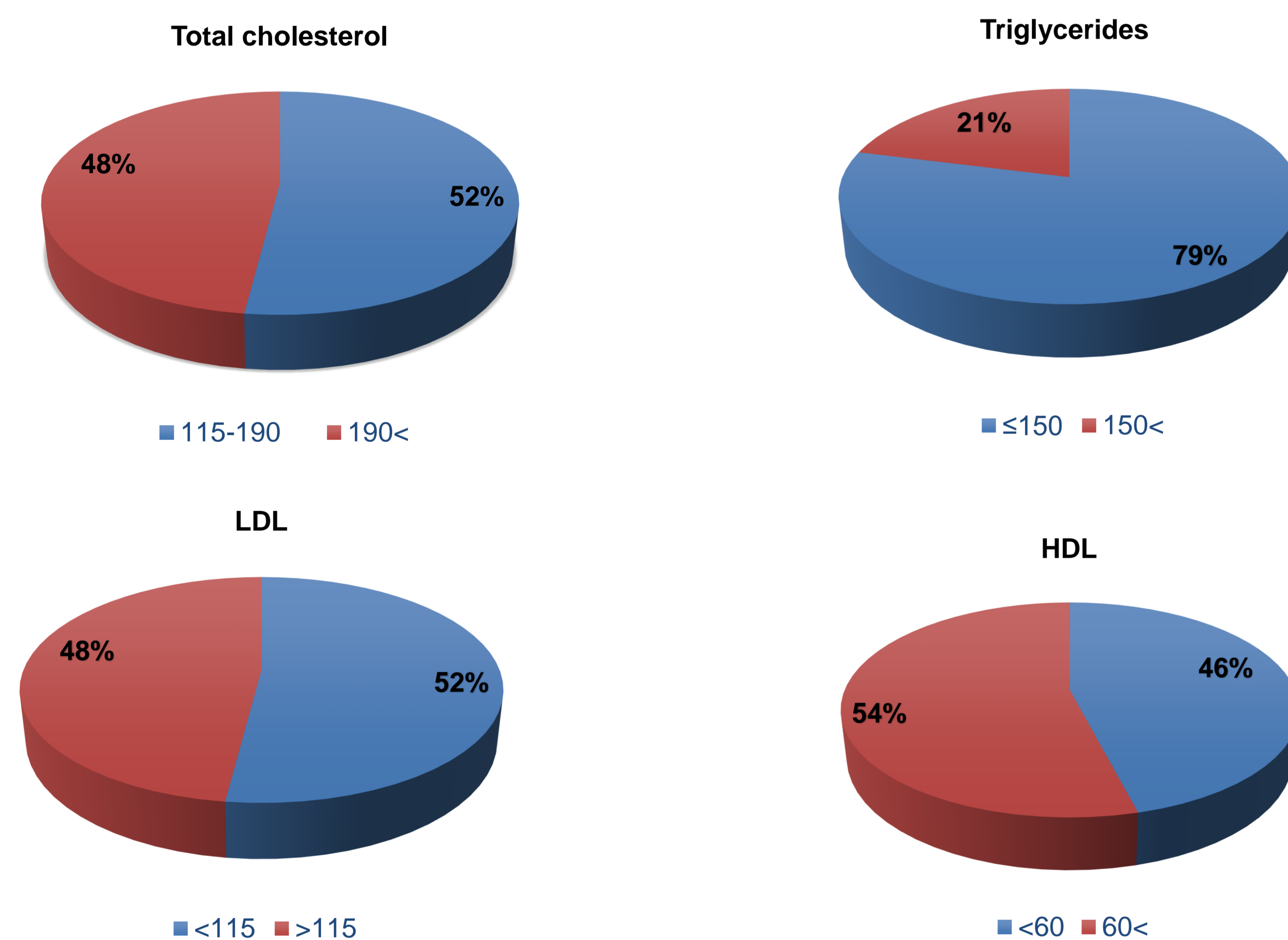


Figure 1. The percentage ratio of normal and non-normative values for individual parameters of the lipid profile (total cholesterol, triglycerides, HDL, LDL).

"Screening for celiac disease of group Świętokrzyskie voivodeship inhabitants".

Of the 312 examined people, 42 obtained positive IgA and / or IgG antibodies titre against tissue transglutaminase, total IgA antibodies, as well as IgA and / or IgG antibodies to deamidated gliadin peptides.

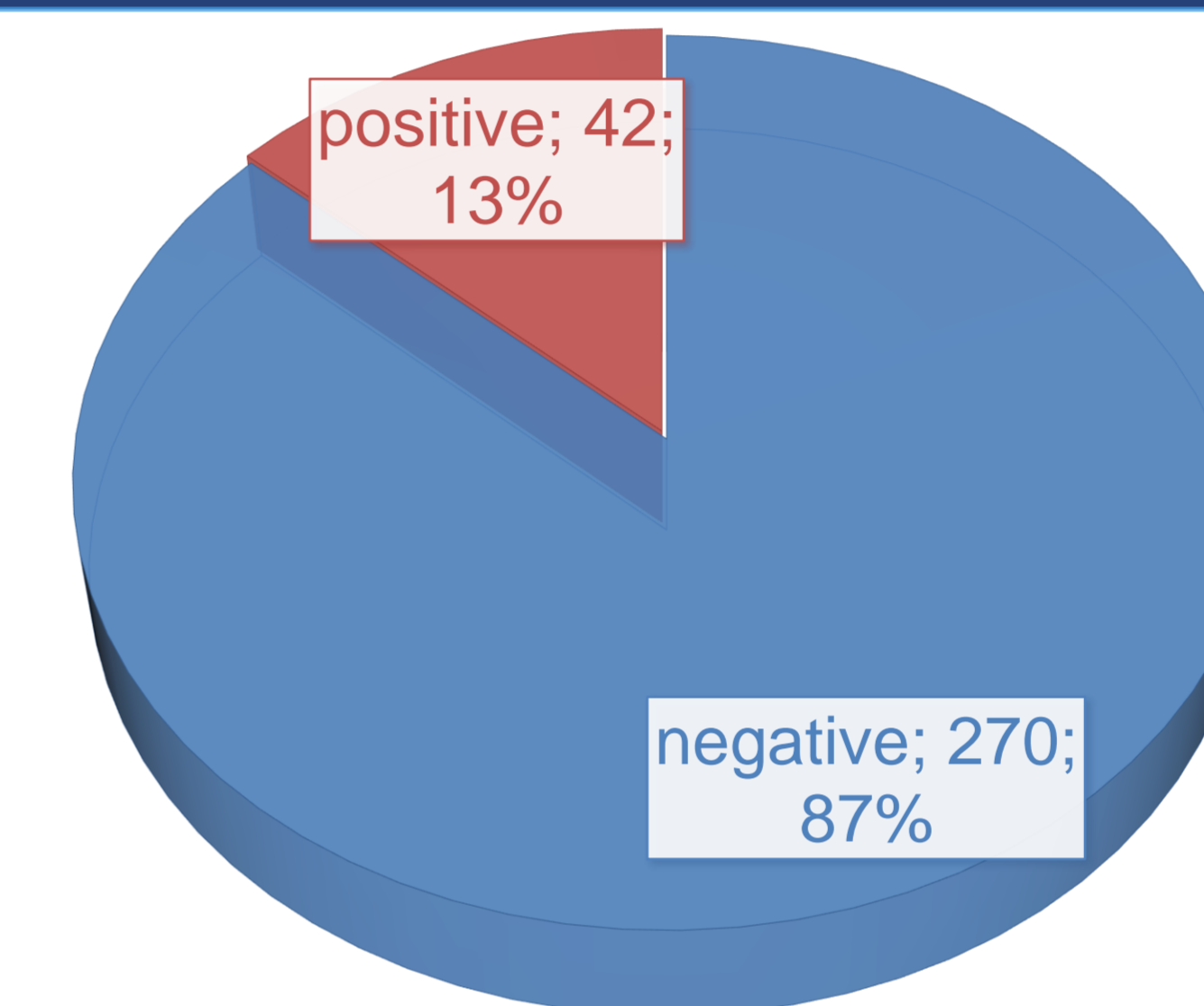


Figure 2. Distribution of the obtained results.

"Assessment of vitamin D concentration in blood, among inhabitants of the Świętokrzyskie voivodeship".

Sufficient level of vitamin D in the subjects was observed in the third quarter of the year. And the lowest in the first quarter of the year. It is quite logical considering the geographical location of our country.

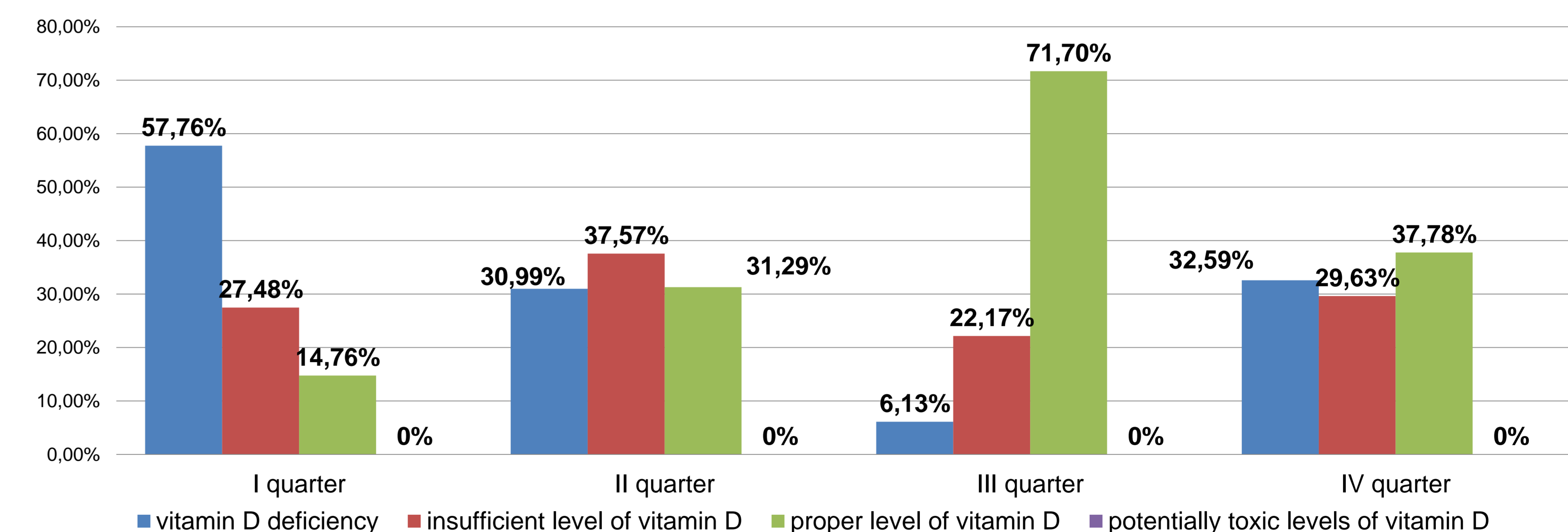


Figure 3. Distribution of vitamin D levels depending on the quarter of the year.

Conclusions

Screening tests are aimed at identifying the disease as early as possible and implementing therapy in the early stages of the disease, which increases the chance of a complete recovery or at least prevents the uncontrolled development of the disease and its serious, irreversible consequences in the past. All three projects make it possible to monitor and improve the health of the region's inhabitants. It is reasonable to continue them.

References

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3. Dawson-Hughes, B., Heaney, R.P., Holick, M.F. et al. Estimates of optimal vitamin D status. *Osteoporos Int* **16**, 713–716 (2005).