

CHOLESTEROL CONTROL WITH MEDICAL TREATMENT (STATINS) OR WITH DIET & EXERCISE?

High School Biology Team (2015-2016): Demetra Hadjihambi (Ayias Fylaxeos High School), π. Anastasios Isaak (Paralimni High School), Maria Miti (St. Markos High School, Archangelos), Corina Skouridou (Archbishop Makarios 3rd High School, Dasoupoli), Margarita Markidou (Lanitis High School), Anna Zografou (St. Loukas Regional High School, Colossi), Andreas Hadjihambis (Ministry of Education and Culture – Cyprus Pedagogical Institute).
Team Coordinator: Dr. Andreas Hadjihambis
PARISSE Coordinator: Dr. Eleni A. Kyza

Identity of Learning Material

Subject: Biology

Students' age: High School, 2nd Grade (17 years old)

Connection with the comprehensive program: Incorporation of the material into the Biology (Specialization course) book, 2nd Grade High School

Duration: 3 X 80'

Goals:

Conceptual understanding of: cholesterol structure and function, different kinds of cholesterol, the connection between cholesterol, enzymes, genes and atherosclerotic plaque

Investigation skills: data collection, processing and evaluation

Decision making and argumentation skills

Communication skills and ability to announce results

Design Framework

Responsible Research and Innovation

Controversial socio-scientific issue

Developing an original and attractive scenario

Stage 2 Inquiry

Motivating students about inquiry activities,

Stage 3 Decision making – Active Citizenship

Making an informed decision Individual and collective action

Controversial Socio-scientific issue – Pedagogical Scenario

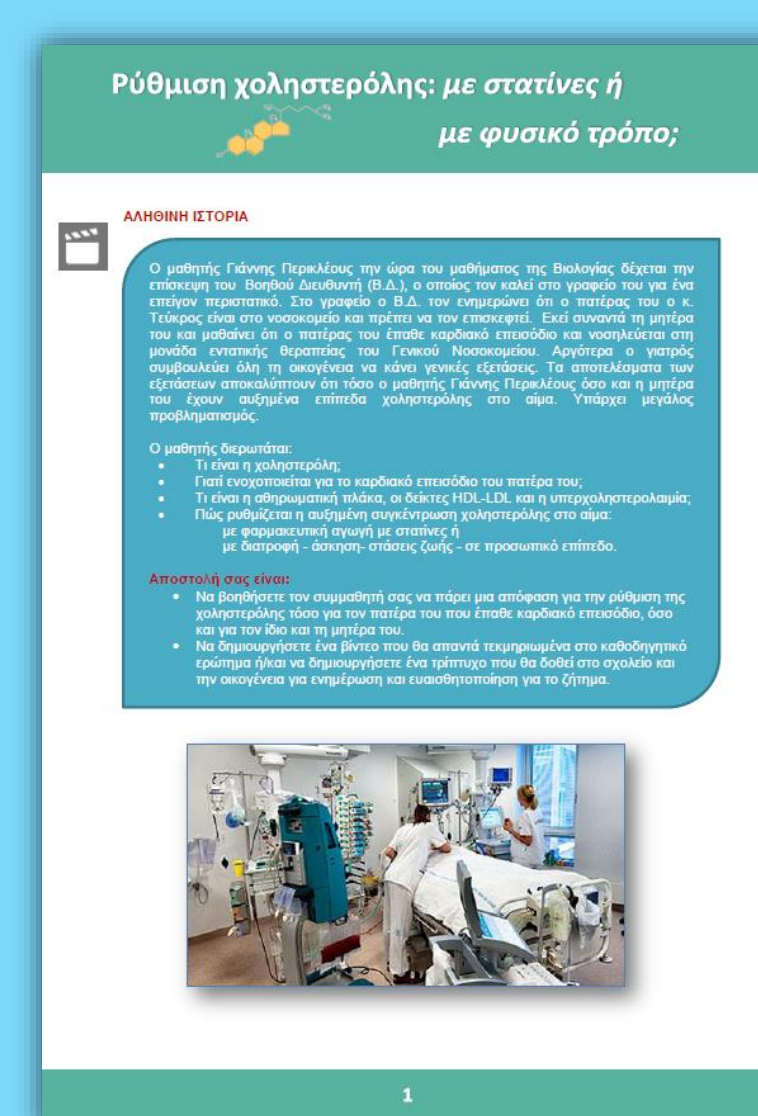
While student Yiannis Pericleous is at school, he is informed by the assistant headmaster that his father, Tefkros, has suffered a heart attack. Later on, the doctor advises the whole family to have a health examination. The results show that Yiannis Pericleous as well as his mother have elevated blood cholesterol levels.

The student wonders:

- What is cholesterol?
- Why is it responsible for his father's heart attack?
- How can elevated blood cholesterol levels be controlled?

The students are asked to answer the following question:

Should cholesterol be controlled with statins or with natural means?

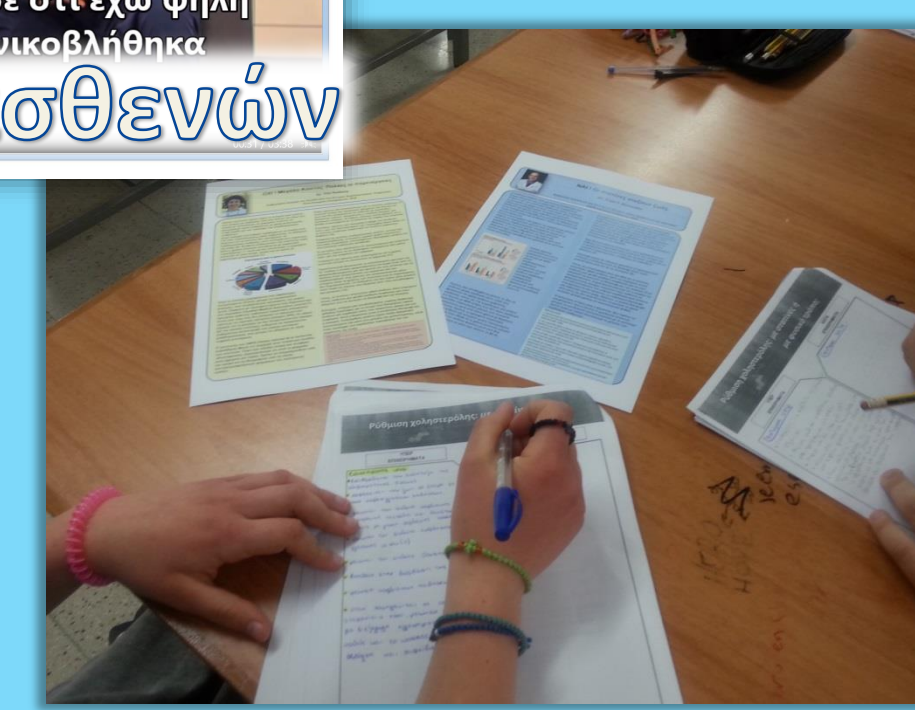
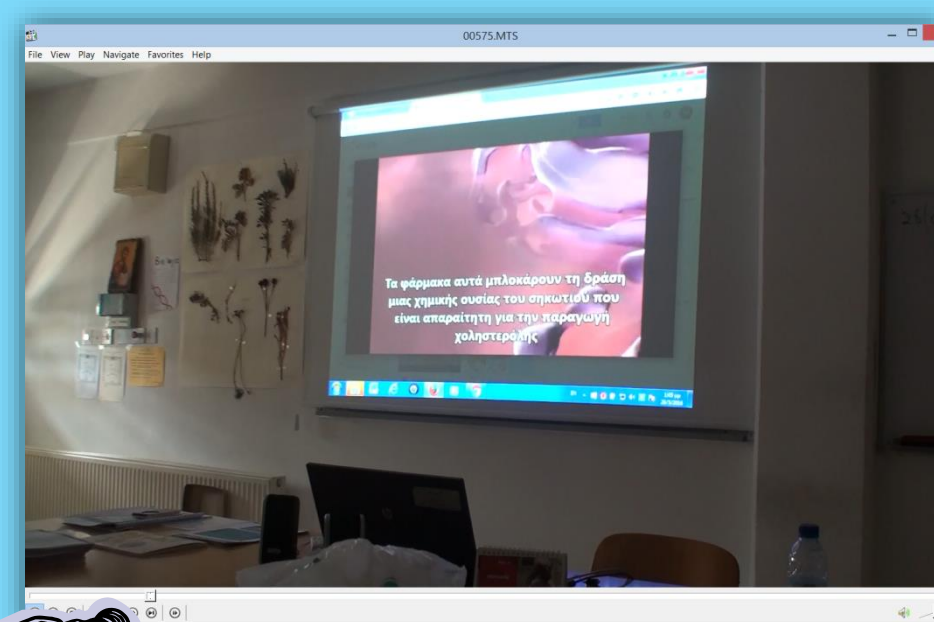
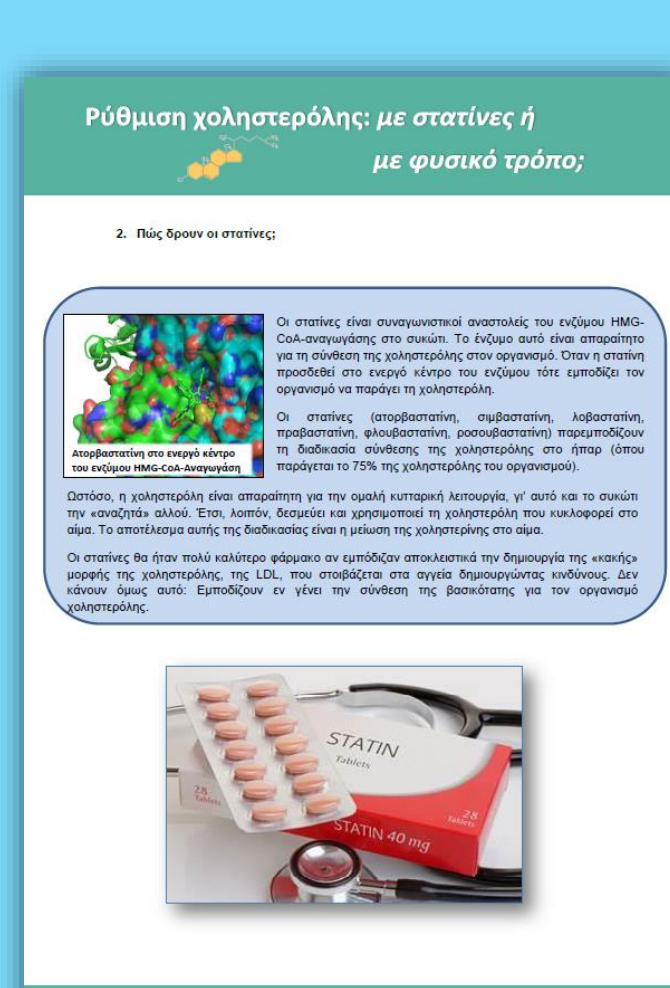
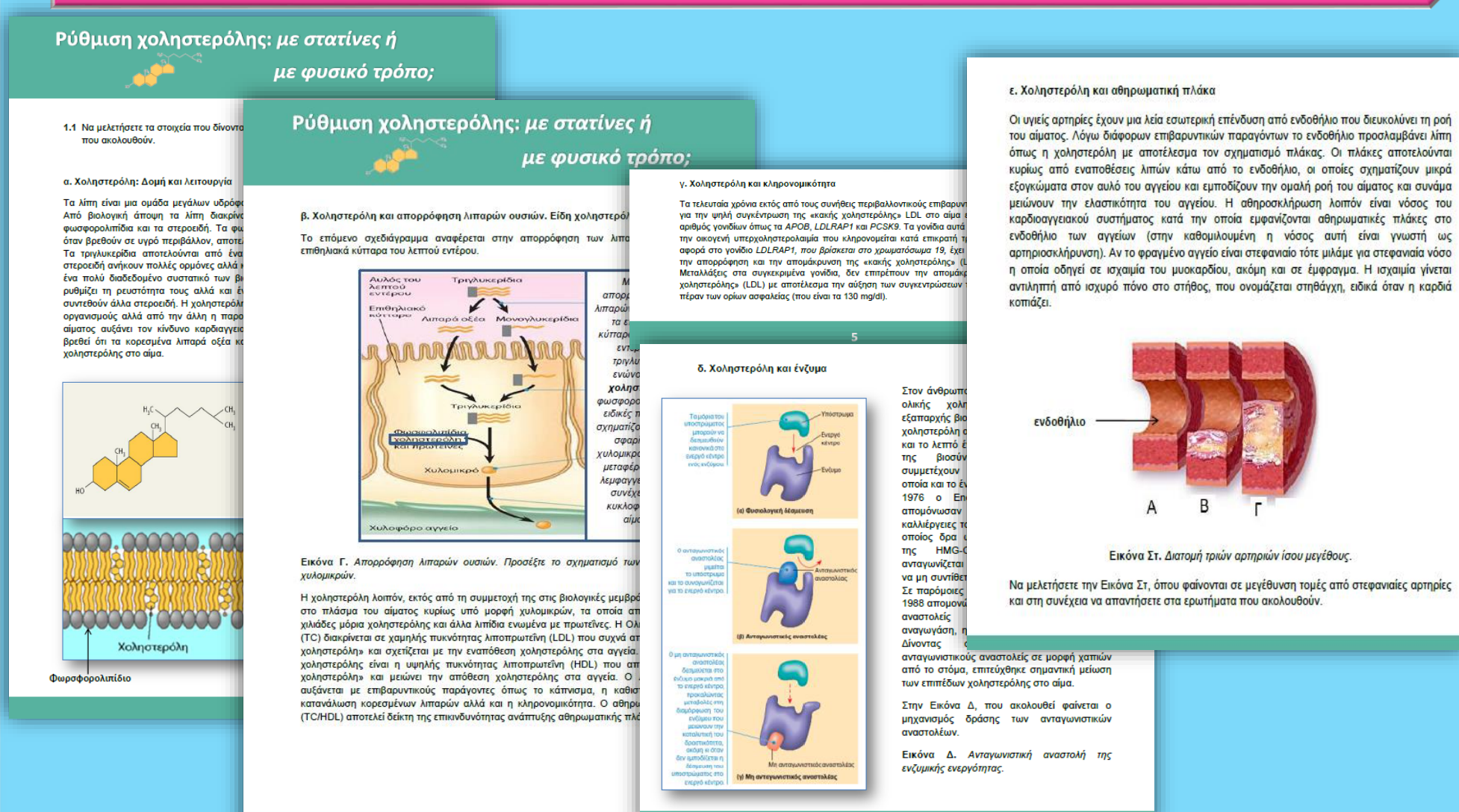


Inquiry

Cholesterol: structure, function, kinds of cholesterol, enzymes, genes, atherosclerotic plaque

What are statins? How do they work?

Controversial issue and conflicting opinions



Decision-making – Resolving the controversial issue – Active Citizenship

The students are asked to express their opinion about the initial question:

Cholesterol control with statins or with natural means?

Using the information they have managed to collect through inquiry, the students participate in an interactive discussion. The first team supports the use of statins and the second team is against it.

The students realize the important role they play as citizens, in relation to the socio-scientific issue they are investigating and generally in relation to such issues. They propose individual and collective actions.

At the same time, they realize the importance of science and of the society in such issues.

Actions on an individual level

Actions on a collective level

