

Dear colleagues, dear students,

Find attached some interesting materials with the topic of contraception and osteoporosis. Topics closely related to the **level of female hormones**.

Recommended procedure for self-study:

- a) To properly understand the principles of functioning of medicines, repeat the physiology of hormone levels - see, for example, the following videos, or read any sources of your choice
- b) Go through the **presentation**
- c) Try to think about the attached **case studies**

PharmDr. Martin Šimíček

1. Contraception:

Before reading the presentation, I recommend some materials or videos where you can repeat the basics of physiology in a simple way, which is the basis of our knowledge of where different types of hormonal contraception interfere with the physiological cycle of sex hormone levels:

Estrogen Reproductive system physiology	https://www.youtube.com/watch?v=2_owp8kNMus
How Birth Control Pills Work, Animation	https://www.youtube.com/watch?v=hI2C7TsnSfk
How does morning after pill work? Postinor/Escapelle	https://www.youtube.com/watch?v=hI2C7TsnSfk
Intrauterine device	https://www.youtube.com/watch?v=ES_JBy-LonY

2. Osteoporosis:

Pathophysiology

The videos produced by the company Amgen, which produces an antibody against osteoporosis - denosumab, have illustrative videos:

Introduction to bone biology	https://www.youtube.com/watch?v=inqWoakkiTc
Osteoblasts and Osteoclasts	https://www.youtube.com/watch?v=78RBpWSOI08
Regulation of Osteoclast Activity	https://www.youtube.com/watch?v=GpMV197xZXc

Finally, a great video describing the mechanism of osteoporosis, the mutual (in) balance between osteoblasts and osteoclasts, including individual mediators, attractive animation (in English)

<https://www.youtube.com/watch?v=VwCkyf0IQwo>

Vitamin D metabolism	https://www.youtube.com/watch?v=EaCfFbZvGIM
	https://www.youtube.com/watch?v=YEnxruA-bsk

Endocrinology - Calcium and Phosphate Regulation	https://www.youtube.com/watch?v=EEM0iRJNhU8
---	---

Denosumab (Prolia)	https://www.youtube.com/watch?v=BLQpUroOwRg
---------------------------	---

Diagnostics - densitometry	https://www.youtube.com/watch?v=iEbvMMquMYg
	https://www.youtube.com/watch?v=heTObdmOU8o

Risk factors for osteoporosis	https://www.youtube.com/watch?v=uvltEnSQ0ZY
--------------------------------------	---