



Nutrient deficiencies of the obese child and adolescent

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Obesity

Excess fat mass

+

Association to several nutrients deficiencies

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Double burden

The keys of the diagnosis

- ✓ **Good knowledge of the local nutritional situation**
- ✓ **Clinics**
- ✓ **Dietary recall**
- ✓ **Biological assesment**

Top 6 deficiencies

4 vitamins

- Vitamin A
- Vitamin D
- Vitamin E
- Folate

3 Minerals /trace elements

- Iron
- Zinc
- Selenium

The pitfalls of the biological diagnosis

- **Obesity is a mild inflammatory disease: impact on proteins**
 - overestimation of ferritine
 - Underestimation of retinol binding protein
- **Increased fat mass**
 - Unknown stores of fat soluble vitamins: A, D,E

Consequences of nutritional deficiencies

- Addition of classical consequences
- and
- Increase of complications of obesity
 - Cardiovascular risk
 - Insulin resistance
 - Liver damage
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