### Who should be screened and when?

The probability that an obese child will remain obese as an adult varies from 20-50% before puberty to 50-70% after puberty, depending on the study.

**Body mass index (BMI)** should be monitored systematically in all children and adolescents:

- irrespective of their age;
- irrespective of their apparent weight;
- irrespective of the reason for the consultation;
- at least two to three times a year.

Particular attention should be paid to children with early risk factors for overweight and obesity.

### How should weight be monitored?

**Using the age and gender specific French BMI charts**

**Tracing the curves on the three charts:**
- The BMI chart
- The height chart
- The weight chart

**Recommended Thresholds in Clinical Practice**

- **Overweight (including obesity):**
  
  \[ \text{BMI} \geq 97^{\text{th}} \text{ percentile of the French BMI reference chart for age and sex.} \]

- **Obesity:**
  
  \[ \text{BMI} \geq \text{IOTF-30} \]

► This information must be recorded in the child’s health record

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1. Body Mass Index (BMI) = weight (kg) / height² (m²)
2. In France, the recommended thresholds in clinical practice for children and adolescents under the age of 18 are those of the BMI charts of the 2010 PNNS (the National Nutrition and Health Plan). Those thresholds are based on French references and those of the International Obesity Task Force (IOTF)
What are the warning signs to look for?

- Early adiposity rebound\(^3\) (the earlier the rebound, the higher the risk of becoming obese).
- Continuous rise in the BMI curve from birth.
- Rapid change to a higher percentile on the BMI chart.
- If the waist circumference to height ratio is > 0.5, the child has too much abdominal fat which is associated with an increased cardiovascular and metabolic risk.

HOW SHOULD THE DIAGNOSIS BE ANNOUNCED?

- Explain, reassure, don't exaggerate the situation, don't make the child nor the family feel guilty
- Assess the child’s and his/her family’s view of his body and weight.
- Present the long-term goals and how to achieve them in a straightforward manner.

TREATMENT OF OVERWEIGHT AND OBESITY IN CHILDREN AND ADOLESCENT

Treatment goals are improvement of quality of life and prevention of complications.

- The child or adolescent should be followed up regularly for at least two years
- Treatment should:
  - be based on the principles of patient education;
  - take into account the patient's diet, patterns of physical activity and sedentary behaviour, daily routine, and finally psychological and socio-economic factors
  - involve the parents and or carers;
  - insure that the patient and/or carers are committed;
  - avoid blame, hurt feelings and stigmatization.

Is weight loss an appropriate goal?

- Weight loss is not the primary goal to achieve in overweight or obese children and adolescents.
- The treatment goal is to slow the progression of the BMI curve
- It is important to know if the patient has his own weight loss goal, and to take it into account.

Contents of initial assessment by the GP (general practitioner)

- Clinical examination including investigation of risk factors and comorbidities.
- Understanding interview focusing on the child and his family

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\(^3\) At around 6 years of age, body fatness normally declines to a minimum, a point called adiposity rebound (AR), before increasing again into adulthood.
When are further investigations required?\(^4\)

**EA**
- In an overweight but not obese child, without any clinical sign of comorbidity and no family history of diabetes or dyslipidaemia:
  - there is no need for further investigations
- In an overweight child with a family history of diabetes or dyslipidaemia OR in an obese child:
  - it is recommended to systematically carry out the following tests:
    - total cholesterol, HDL cholesterol and plasma triglycerides concentrations, in order to establish LDL-C;
    - fasting blood glucose and transaminases (ASAT, ALAT).

**APPROACH AND TREATMENT METHODS: THE DOCTOR’S ROLE**

### Dietary changes

**EA**
- The aim is to achieve a sustainable change in eating habits of the child and adolescent and his family according to the recommendations of the PNNS guidelines.
- .Goals should be agreed to by the patient and his family and their individual tastes taken into account
- Weight loss diets are not recommended.
- No particular food should be forbidden

### Physical activity

**EA**
- The aim is to increase physical activity and reduce sedentary behavior.
- Sixty minutes of cumulative, moderate to vigorous activity per day is recommended.
- Reducing time spent in sedentary behavior (eg. watching television and sitting in front of a screen) is recommended.

### Psychological/behavioral support

**EA**
- Psychological support consists of
  - assessing and reinforcing motivation, positive goal-setting, providing support and addressing feelings of guilt, reinforcing skills and insuring parental response is competent and consistent
  - The child or adolescent should be referred to a psychologist and/or a child psychiatrist in the following situations:
    - severe or persistent mental distress;
    - severe obesity;
    - associated psychological problems or eating disorder;
    - family or social stress factors;
    - in case of an eventual separation from the family (a stay in an SSR\(^5\), an inpatient unit);
    - failure of previous weight management strategies.

### Medication and surgery

**EA**
- Medication is not recommended in the treatment of overweight and obesity in children and adolescents.
- Surgery is neither indicated nor recommended in the treatment of obesity in children and adolescents.

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\(^4\) Other tests or opinions may be needed depending on the clinical examination findings (see full text of guidelines).

\(^5\) An SSR is a follow up care and readaptation residential unit.
This summary presents the main points of the good practice guidelines:

"Overweight and obesity in children and adolescents" - "Clinical practice guidelines" - September 2011.

The full text of these guidelines and the scientific rationale can be consulted at www.has-sante.fr

First level: treatment by the GP

**Indications:**
- simple uncomplicated overweight or obesity;
- favourable family environment suggesting an ability to implement the proposed changes;
- no major psychological or social problems.

The child's GP carries out the initial assessment and decides on any referrals needed. The GP may be supported during follow-up by other local professionals, as required (dietician, psychologist, physical activity professional, etc., within a network or not).

Care is coordinated by the patient's own GP.

Second level: multidisciplinary treatment

**Indications:**
- failure of first level;
- and/or overweight with a sudden rise in the BMI curve;
- and/or obesity with comorbidities;
- and/or unfavorable family environment;
- and/or psychological or social problems.

Multidisciplinary follow-up is recommended (dietician and/or psychologist or psychiatrist and/or physical activity professional, etc.).

A specialized team may be consulted to provide expertise, offer technical help for potential further investigations, to arrange group therapy sessions or appropriate physical activity sessions and eventually a short stay in an in-patient unit. (<2 months).

Care is coordinated by the patient's GP or the specialized team.

Third level: treatment organized by a physician and a specialized team.

**Indications:**
- Failure of second level;
- and/or severe comorbidities;
- and/or incapacity in everyday life caused by obesity;
- and/or very unfavorable family environment.

Multidisciplinary follow-up is essential.

The physician and specialized team may contribute expertise. They can coordinate care along with the patient's GP, decide if further referrals are necessary, and advise on whether a stay in an in-patient unit is indicated (either short, <2 months, or longer, >2 months).

**Grading of recommendations**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>EA</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>Established scientific evidence</td>
<td>Presumption of a scientific foundation</td>
<td>Low level of evidence</td>
<td>Expert agreement</td>
</tr>
</tbody>
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