

# Overweight & Obesity in Toddlers

An evidence-based guide to toddler nutrition for healthcare professionals

Healthcare professionals play an important part in helping parents of toddlers (1-3 years) understand the causes of excessive weight gain, and how to avoid it.

by Ruth Charles, *a practicing dietician since 1992, and founder of the Irish Food Allergy Network (IFAN).*



## Key Learnings

1. Overweight and obesity is an increasing problem amongst Irish toddlers.
2. Excess weight gain that begins during the toddler years can lead to significant long-term health problems.
3. It is important for parents to establish good eating habits during the toddler years, as these habits are likely to continue into adulthood.

## A growing problem: overweight and obesity in toddlers in Ireland

The National Pre-School Nutrition Survey found that 23% of Irish toddlers are classified as either overweight or obese<sup>1</sup>.

Toddlers who are overweight are 50% more likely to be overweight as adults<sup>2</sup>. Obesity that has its roots in toddlerhood has significantly higher health risks associated with later life. These include: joint pain, breathing problems, psychosocial difficulties, and an increased risk of future heart disease, type 2 diabetes and certain cancers<sup>3</sup>.

## Food Energy Imbalance.

Food Energy Imbalance. Excessive weight gain in toddlers is usually a result of an imbalance of food energy; i.e. eating food energy in excess of energy requirements for physical activity, growth and development<sup>3</sup>. The imbalance of energy intake and energy expenditure can lead to excess weight gain in toddlers that accumulates as extra adipose tissue (fat). Extra adipose tissue (fat) contributes to the physical and metabolic changes seen in obesity<sup>4</sup>.



## Genetics and other influencers.

**Genetics, developmental influences** (‘metabolic programming’, or epigenetics), **eating patterns, activity levels** and **environment** have also been identified as factors influencing the development of obesity in toddlers<sup>5</sup>.

**Parental link.** Epidemiological data has shown strong associations between the risk of overweight and obesity in toddlers and their parents. Research suggests that having one obese parent increases the risk, and if that parent is the mother the risk is higher. The highest risk is associated with toddlers who have two obese parents<sup>6,7</sup>.

## Medical factors.

Medical causes of overweight and obesity are rare but when environmental factors have been excluded, overweight or obese toddlers should be referred to a paediatric endocrinologist<sup>4</sup>. Medical causes include:

- Hypothyroidism.
- Growth hormone deficiency.
- Cushing’s syndrome.
- Leptin deficiency.
- Chromosomal disorders, such as Prader-Willi syndrome.

## Assessing overweight and obesity: In Primary Care

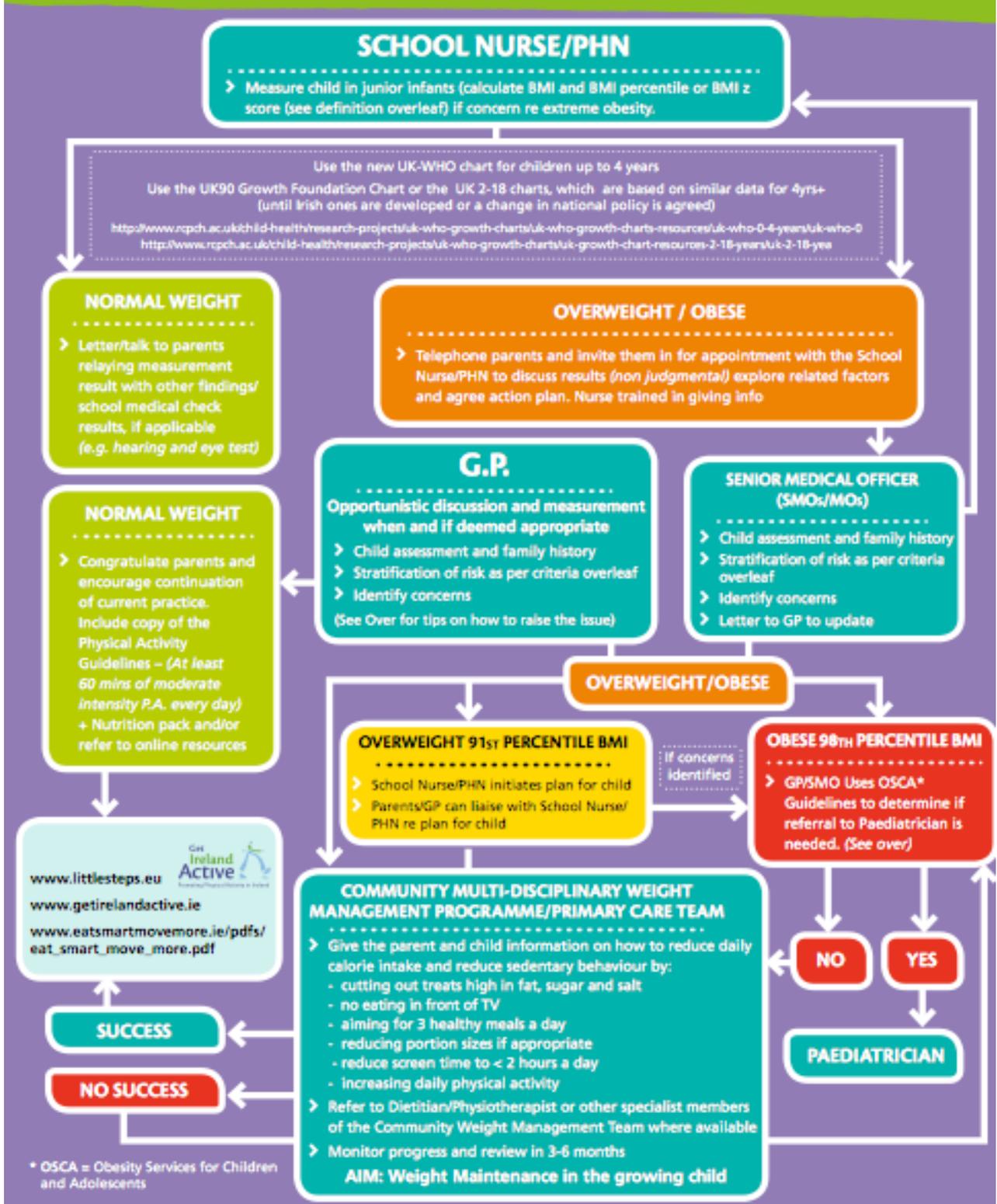
The weight management treatment algorithm for children produced by the Health Service Executive (HSE) in conjunction with the Irish College of General Practitioners (ICGP) and dietitians, has a quick reference guide for use in primary care<sup>8</sup>.

# Weight Management Treatment Algorithm for Children



## A Quick Reference Guide For Primary Care

(See [www.icgp.ie/weightmanagement](http://www.icgp.ie/weightmanagement) or [www.hse.ie](http://www.hse.ie) for the Weight Management Treatment Algorithms for both Adults and Children, an adult BMI chart plus additional support online resources.)



\*Permission to use Weight Management Treatment algorithm for children granted from Irish Congress of General Practitioners (ICGP).

## Assessing overweight and obesity: BMI

For toddlers aged two and older, overweight and obesity can be assessed using body mass index (BMI). BMI is calculated by dividing weight (in kg) by the square of height (in metres)\*.

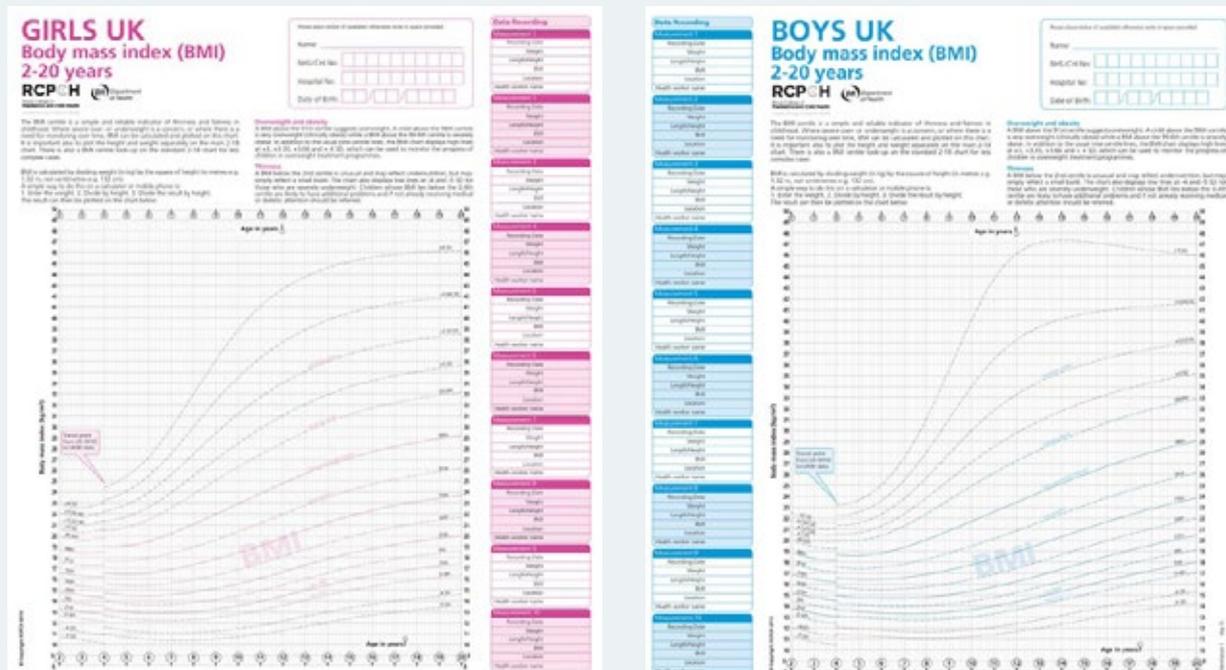
A simple way to do this on a calculator or mobile phone is:

- 1) Enter the weight.
- 2) Divide by height.
- 3) Divide the result by height.

The result can then be plotted on these gender-specific BMI charts. Note: BMI is not a direct measure of adiposity, and needs to be interpreted with caution.

\*Toddlers should be weighed and measured accurately using only calibrated equipment. Try to use the same weighing scales for consistency.

### Body mass index (BMI) charts (Girls and Boys, 2-20 years)<sup>9</sup>



A BMI above the 91st centile suggests overweight. A toddler above the 98th centile is very overweight (clinically obese) while a BMI above the 99.6th centile is severely obese. In addition to the usual nine centile lines, the BMI chart displays high lines at +3, +3.33, +3.66 and + 4 SD, which can be used to monitor the progress of children in overweight treatment programmes.<sup>9</sup>

Overweight and obese toddlers may need to be referred to a paediatric dietitian for further dietary advice and monitoring.

## Prevention and management of overweight and obesity

Many parents do not recognise overweight or obesity in their toddler, so healthcare professionals need to be aware and sensitive when discussing the issue.

### **Modifying behaviours.**

It is important for parents to establish good eating habits during the toddler years as these habits are likely to continue into adulthood. Prevention and treatment of overweight and obesity in toddlers focuses on modifying behaviours that lead to excessive energy intake and insufficient energy expenditure.

### **Support with sensitivity.**

The provision of food can be an emotional issue for parents and many are more concerned about their toddlers being underweight than overweight. Initiatives to improve lifestyles in families at risk of obesity need to be undertaken sensitively and should involve support for parents. Advice, treatment and care should take into account parents' needs, abilities and preferences. Parents should have the opportunity to make informed decisions about their toddler's care and treatment, in partnership with their healthcare professionals.

### QUICK TIP FOR PARENTS

**1**

A toddler should have at least three hours of activity daily, which can be spread over the day in short episodes!

### **The importance of physical activity.**

Physical activity in toddlers is not just about weight control. It improves fitness, hand eye co-ordination, strength, tone and flexibility. Activity needs to be fun and considered 'normal', rather than a chore. Physical activity and fitness are associated with reduced risk of overweight and disease in later life as well as improved self-esteem and positive body image<sup>4</sup>.

Parents should allow for unlimited active playtime for toddlers in a safe and supportive environment. Toddlers should be active for about three hours each day. This includes light activities such as building blocks or playing on the floor, and more vigorous activities such as running and jumping<sup>9</sup>.

### **Reduce excess screen time.**

Some toddlers can spend a lot of time watching a screen (TV, phone etc). Research has shown that toddlers who watch TV for more than eight hours a week (over one hour per day) were at a higher risk of becoming obese at seven years old than those who watched less<sup>11</sup>. You may need to help parents exploring physical activities that can be substituted for such sedentary behaviour as watching TV or DVDs.

### **Quality rest periods.**

Toddlers need adequate sleep of about 12 hours for normal growth. A study found that three year olds who slept for less than 10 hours per day were found to be at greater risk of being obese at age seven<sup>8</sup>.

### The importance of nutrition.

Nutrition during the toddler years is very important as eating habits developed during these years can impact on lifelong health. Parents also need to be actively supported in understanding the principles of healthy food shopping, eating and the cooking skills necessary to prepare simple home-cooked food. Encourage parents not to rely on convenience foods, which are usually higher in energy, fat, sugar and salt. Stress the importance of regular mealtimes over grazing/snacking, which can contribute to poor eating habits in the long-term.

## Quick guide for parents for toddler meals

1. Follow the toddler food pyramid as a guide for a healthy and varied diet.<sup>13</sup>
2. Aim for three meals, and two to three snacks per day.
3. Follow the Safefood portion guide<sup>12</sup> (see table).
4. Don't have fatty and sugary snack foods freely available between and after meals.
5. Supply toddler friendly drinks e.g. milk and water.

# Toddler Food Pyramid



Source: The Health Service Executive (HSE) Food for Young Children information booklet, 2006.

## Safefood Portion Guide for toddlers<sup>12</sup>

|                                   |   |
|-----------------------------------|---|
| Breads, potatoes, rice and cereal | 1 slice of sliced pan, ½ large pitta, 2 heaped dessertspoons mashed potato, 4 heaped dessertspoons cooked rice, 2 heaped large plastic cook's serving spoons of cooked pasta, ¾ wheat biscuit.  |
| Fruits and vegetables             | ½ apple, ½ banana, 9 grapes, 1 mandarin, 5 melon cubes, 1 plum, 100mls of juice/smoothie, 8 carrot sticks, 3 florets broccoli, 4 sticks cucumber.   |
| Milk, yogurt and cheese           | 2 slices of cheese, 125g pot yogurt, 2 small (50g) pots yoghurt, 200mls milk, 4 dessertspoons custard.  |
| Meat, fish and eggs               | 8-10 pieces beef, 4½ dessertspoons cooked minced beef, 6-8 pieces of chicken breast, ⅔ pork or lamb chop, 46g salmon, 46g white fish, 1½ fish finger, 4½ heaped dessertspoons of scrambled egg. |

Adapted from: What is a Serving Size? A Guide for Pre-Schools, by Safefood.

Suitable articles for parents on this topic are available at [www.toddlebox.ie/nutrition](http://www.toddlebox.ie/nutrition)

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