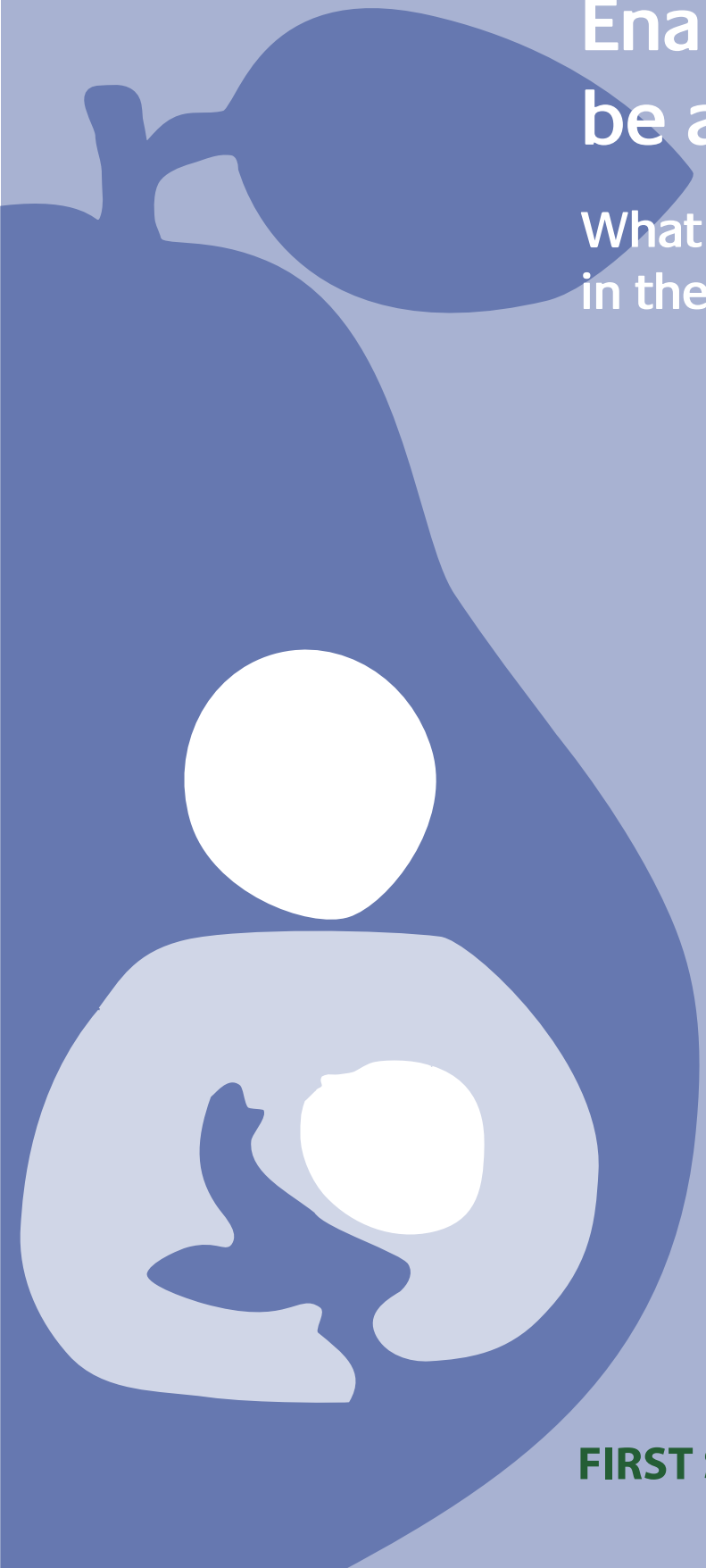
Enabling children to be a healthy weight

What we need to do better in the first 1,000 days



FIRST STEPS NUTRITION TRUST

Enabling children to be a healthy weight: What we need to do better in the first 1,000 days

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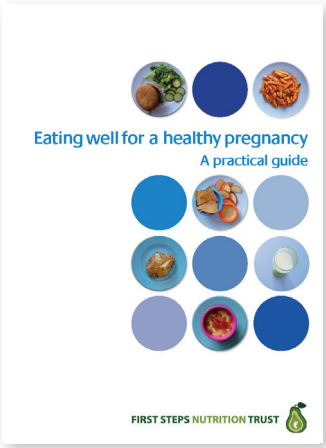
ABOUT THIS REPORT

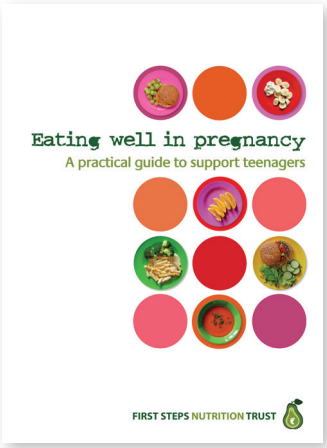
This report focuses on overweight and obesity in the first 1,000 days, from conception to the child's second birthday. It outlines what a journey which promotes a healthy weight in the early years would look like, and what actions First Steps Nutrition Trust believes need to be funded and implemented in England, to achieve this.

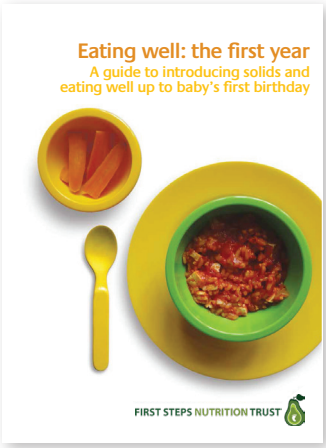
We support all the initiatives being proactively promoted to change the obesogenic environment that women and their partners live in and babies are born into, and fully support the recommendations made by the Obesity Healthy Alliance (www.obesityhealthalliance.org.uk). We do not, however, repeat these recommendations here and instead focus on issues specific to the time period from conception (and before) to 2 years old. We also do not focus on activity, but acknowledge the importance of following guidance from the Chief Medical Officer on activity in pregnancy and the early years (Department of Health and Social Care, 2019a).

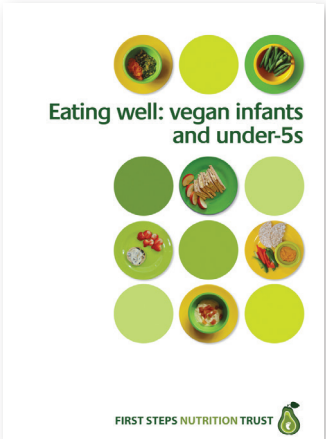
The report also does not consider the wider benefits of eating well in the first 1,000 days, but there are obviously other very important implications of good nutrition in this period that are not directly related to prevention of excess weight gain among children.

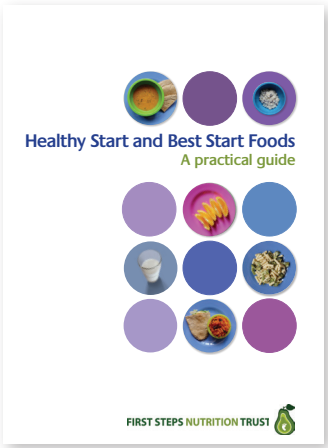
For comprehensive information about eating well in pregnancy, as a new mum, in the first year of life and for those aged 1-4 years, please see our practical guides which are shown on the next page.











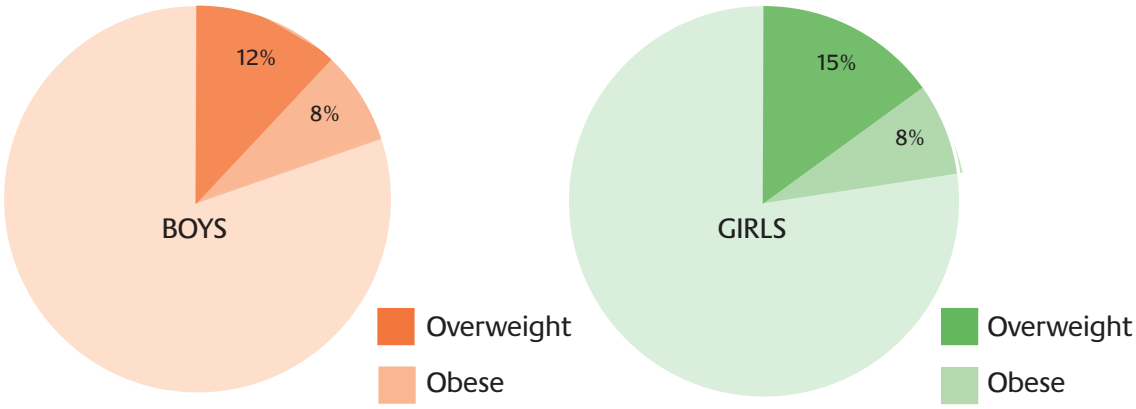
These resources are all available for download from www.firststepsnutrition.org

THE CHALLENGE

Currently about 1 in 5 preschool children in England are living with overweight or obesity.

The 2019 Health Survey for England reported that in 2018/2019 about 1 in 5 children aged 2-4 years had a weight classed as overweight or obese. Eight percent of 2-4 year olds had a weight classed as obese (NHS Digital, 2020a). See Figure 1.

Figure 1: *Prevalence of overweight and obesity among boys and girls aged 2-4 years in England in 2018/2019*

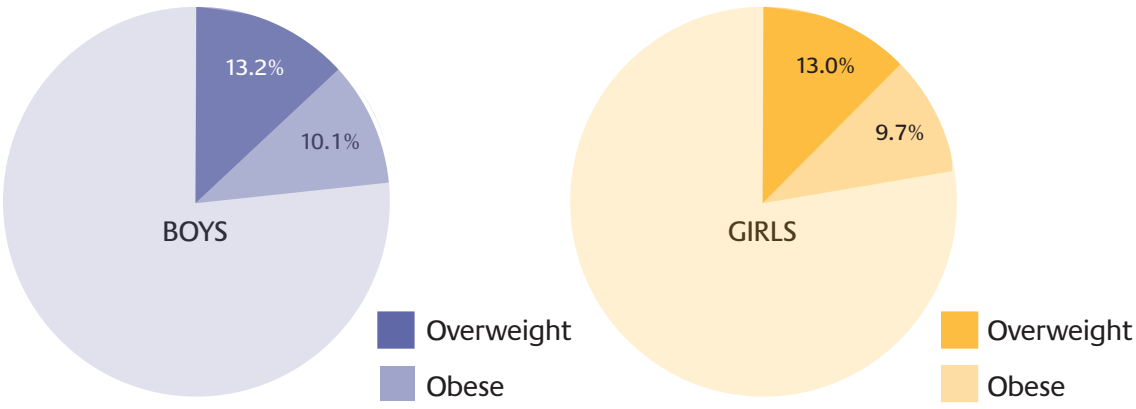


Source: NHS Digital, 2020a.

By the time children start school at 4-5 years of age, 1 in 4 children (23.0%) are living with overweight or obesity. The overall prevalence of obesity in this age group is 9.9%, but prevalence is over twice as high in the most deprived areas (13.3%) than in the least deprived areas (6.0%) (NHS Digital, 2020b). See Figure 2.

The Government has committed to halve childhood obesity by 2030 (Department of Health and Social Care, 2018), included actions to reduce overweight in infants and young children in the Prevention Green Paper (Department of Health and Social Care, 2019b) and recently reasserted its 'commitment to empowering children to lead healthier lives' (Department of

Figure 2: *Prevalence of overweight and obesity among boys and girls aged 4-5 years in England in 2019/2020*



Source: NHS Digital, 2020b.

Health and Social Care, 2020). However, lack of consistent and funded support for essential actions in the first 1,000 days makes current policies insufficient to meet this goal. Without urgent and dramatic change in policy and practice, the current trend will persist, or worsen, and at least a quarter of babies conceived in England in 2021 will still be starting primary school an unhealthy weight.

In this report we outline where we believe policy improvements and better investment in universal services in England could generate an environment which would enable the next generation to maintain a healthy weight as they grow.

What we would like to see

To effectively prevent the next generation of school children in England becoming overweight, and to leverage other associated health benefits, we need at least to meet the following basic nutrition-related goals:

- Families are better nutritionally prepared for pregnancy.
- Fewer babies are born large for gestational age or small for gestational age.
- Rapid catch-up growth in infancy is avoided, particularly in infants born small for gestational age.
- More mothers who want to are enabled to:
  - start breastfeeding and continue breastfeeding their baby in the early weeks
  - give their baby only breastmilk until around 6 months of age (i.e. breastfeed exclusively)
  - continue to breastfeed their baby alongside feeding solid foods until at least 1 year of age and be supported to continue breastfeeding up to 2 years and beyond if they wish.
- Families who feed their babies infant formula are enabled to do so safely and responsively using an appropriate product.
- Families introduce a variety of nutrient-dense foods when their infant is around 6 months of age.
- In the second six months of life, and into their second year, infants and young children are not given ultra-processed foods, but are given high-quality, minimally processed and unprocessed foods in appropriate amounts, and are fed responsively.
- Women, infants and young children are not compromised nutritionally because they live in low-income households.

RECOMMENDATIONS

Leadership, strategy and data collection

1 **Invest in leadership and strategy on maternal, infant and young child nutrition.**

The Government should appoint a permanent, multi-sectoral maternal, infant and young child nutrition strategy group and develop, fund and implement a national strategy to improve mothers' diets and infant and young child feeding practices.

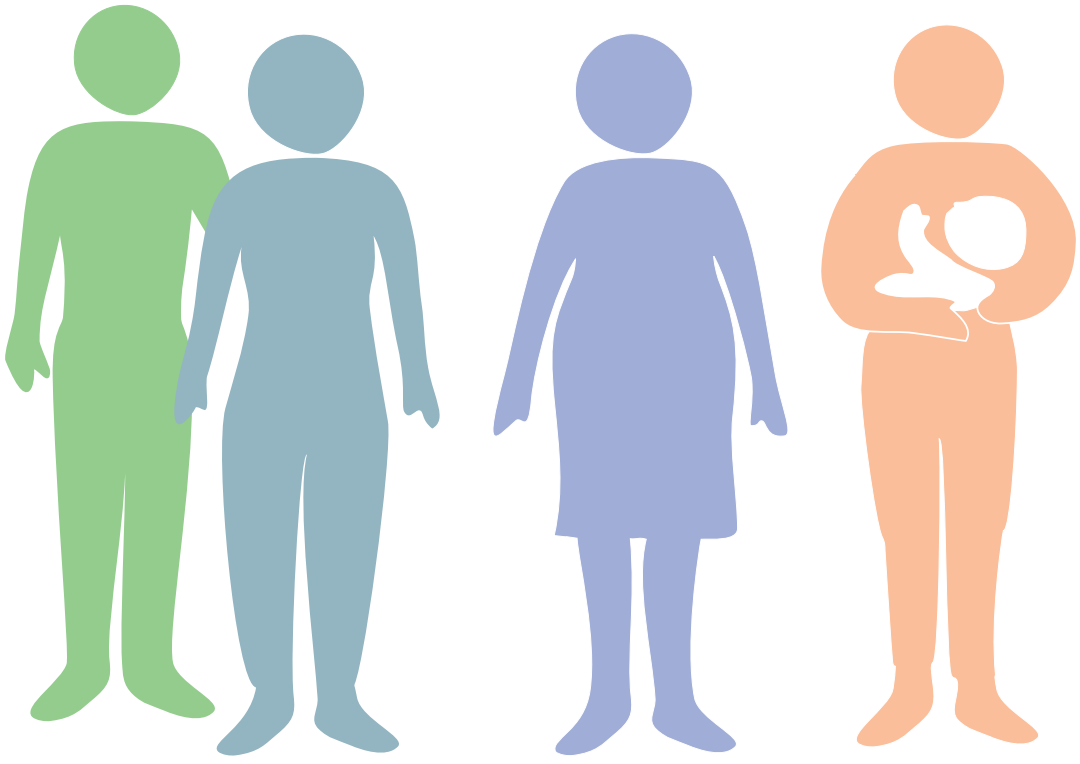
2 **Collect data on infant and young child feeding practices and ensure better measurement and population surveillance of weight and height in the early years.**

The Department of Health and Social Care should ensure that data collection for a comprehensive maternal and infant diet and nutrition survey starts in 2022 and that this survey is repeated regularly to monitor changes over time. In addition, Public Health England/ the new Office for Health Promotion should give a target date for the availability of nationally representative weight data from the personal child health record, and should mandate the quality-checking, collection and reporting of data on weight and height at the face-to-face 2-2$^{1}/_{2}$ year health visitor review.

Societal knowledge of pre-conception health, pregnancy and breastfeeding

3 **Improve societal knowledge of the importance of healthy weight and eating well, before and during pregnancy.**

The Government should develop, fund and implement a strategy to ensure all parents-to-be know the importance of being a healthy weight before conception and during pregnancy, and to encourage use of a pre-conception planning tool to inform and aid appropriate lifestyle changes.



4 Teach all young people about pregnancy and breastfeeding as part of personal, social, health and economic education (PSHE).

The Department for Education should ensure that all young people – boys and girls – learn about the importance of healthy body weight and a good diet before and during pregnancy, and that breastfeeding as a normal human activity is explained and de-stigmatised.

Infant feeding

5 Fund and support all neonatal, maternity and health visiting services, Children's Centres and midwifery and health visiting courses in universities to become Unicef UK Baby Friendly Initiative accredited.

We welcome the inclusion of Unicef UK Baby Friendly Initiative accreditation for maternity settings in the new NHS Long Term Plan and urge the Government to fund expansion to ensure all neonatal, health visiting and Children's Centre or 'Family Hub' settings and university midwifery and health visiting courses are also accredited.

6 Invest in universal breastfeeding support.

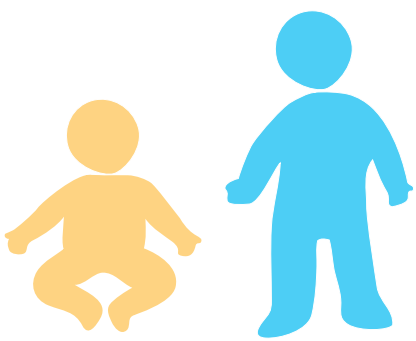
All local authorities should commission, and consistently fund, evidence-based, universal breastfeeding support programmes. To enable more women to meet their breastfeeding goals, these programmes should be delivered by specialist/lead midwives and health visitors or suitably qualified breastfeeding specialists alongside trained peer supporters with accredited qualifications.

7 Strengthen England's legislation, in line with that in Scotland, to protect the rights of parents to feed their children wherever they choose.

In Scotland, breastfeeding is protected by the Breastfeeding etc. (Scotland) Act 2005 under which it is an offence to stop someone in a public place from feeding their child, if under 2 years, with milk. The legislation allows for fines for preventing breastfeeding in public places. In England, the Equality Act states only that it is sex discrimination to treat a woman unfavourably because she is breastfeeding.

8 Protect parents and caregivers from misleading commercial influence on when, what and how they feed their babies and young children.

The Government should enact and enforce stronger regulations to stop the inappropriate marketing of formula milks, baby foods and snacks and other foods and drinks promoted for



infants and young children. Company marketing is often contrary to public health messaging around optimal feeding practices, so inappropriate products need to be taken out of the spotlight. The International Code of Marketing of Breastmilk Substitutes and subsequent relevant World Health Assembly resolutions provide a minimum standard which could be incorporated into UK law.

9 **Strengthen legislation to support breastfeeding mothers returning to work.**

ACAS guidance should be made statutory, thereby legally requiring all employers to conduct risk assessments, grant flexible working requests, and provide a private space and paid breaks at work for employees who want to breastfeed and/or express breastmilk and manage its safe storage.

Introduction of solids, and responsive feeding

10 **Support families to practise age-appropriate introduction of solids and responsive feeding.**

Information and practical support for families on the timely introduction of cost-effective, nutritious complementary foods and on how to feed responsively (which applies also to milk feeding), should be made universally available at a local level. Families should also be informed of the disadvantages of commercial baby foods, drinks and snacks.

Composition, labelling and marketing of foods for infants and young children

11 **Regulate the composition, labelling and marketing of foods and drinks for infants and young children.**

To protect the youngest consumers, urgent action is needed to regulate the composition, labelling and marketing of foods and drinks for infants and young children, many of which are ultra-processed. We recommend that guidance and a nutrient profile model from WHO Europe are used as the basis of UK regulation and, in addition, that the use of cartoon characters on foods marketed for preschool children is banned.

Making statutory family support services fit for purpose

12 **Protect and expand universal health visiting services.**

Funding for universal health visiting services should be provided to local authorities by central Government to ensure that all families receive, as a minimum, seven face-to-face contacts with a health visitor (antenatal, new birth, 6-8 weeks, 3-4 months, 6 months, 1 year and 2-2$^{1}/_{2}$ year review), as set out in the 2021 Healthy Child Programme.

13 **Review and refresh the Healthy Start scheme.**

The Government's Healthy Start scheme, providing vitamins and food benefits to young and low-income pregnant women and low-income families with children up to 4 years of age,

needs to be fully reviewed and refreshed to meet some of its original objectives, including promoting breastfeeding and preventing obesity. Required changes include: extended eligibility; an enhanced offer for breastfeeding women; increased visibility, accessibility and uptake of the scheme; and integration with other benefits and services for young families.

14 **Ring-fence funding for Children's Centres/Family Hubs.**

The Government should provide all local authorities with ring-fenced funding to establish, re-establish or support the development of universal Children's Centres or Family Hubs, with a focus on areas of deprivation. Centres should be able to offer breastfeeding peer support, advice on the introduction of complementary foods, cooking classes, and evidence-based family behaviour change parenting programmes such as HENRY.

15 **Make food and drink standards in early years settings mandatory.**

The voluntary food and drink standards for early years settings should be made mandatory, and additional support to meet these standards should be provided to settings in areas of deprivation. Meeting the standards should be part of the Ofsted inspection framework. The standards should be made the intellectual property of Public Health England/the new Office for Health Promotion, they should be updated regularly, and their dissemination should be supported.

16 **Re-design the Government Nursery Milk Scheme.**

The Nursery Milk Scheme should not offer reimbursement for infant formula as this undermines public health recommendations on optimal infant and young child feeding, and discriminates against mothers providing breastmilk for their baby. The scheme should be reviewed to focus on children over the age of 1 year, and to ensure it works harmoniously with mandatory food and drink standards in early years settings to support young child health.

Nutrition training for health professionals

17 **Include nutrition training in core curricula for all healthcare professionals.**

Ensure all those healthcare professionals who have meaningful contact with pregnant women and young families are given appropriate information and skills to support healthy nutrition and healthy weight as part of the core curricula for their profession.

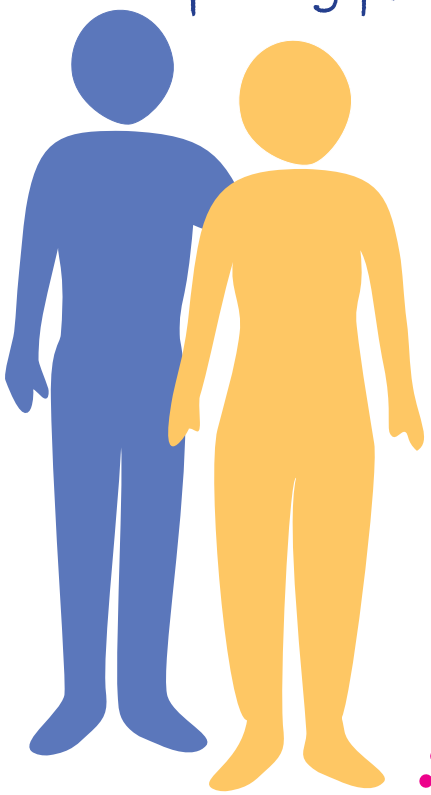
Enshrining the right to food in law

18 **Enshrine the right to food in law, and ensure families have sufficient funds for an appropriate healthy diet.**

The right to food sits within international human rights law that the UK Government signed in 1976, but this has never been incorporated into domestic law. A comprehensive National Food Strategy presents an opportunity to affirm an individual's right to be able to eat well, and the collective right to a fair and sustainable food system.

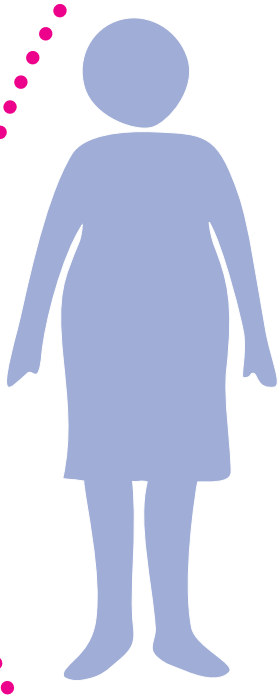
A HEALTHIER JOURNEY THROUGH THE FIRST 1,000 DAYS

Young people



- ✓ All children and young people in school learn about the importance of good nutrition before and during pregnancy and the physiological normality and importance of breastfeeding.
- ✓ Society creates an enabling environment in which more men and women are a healthy weight before starting a family.
- ✓ Consistent, independent advice and support on eating well and being a healthy weight, free from industry influence, is easily accessible for those planning a pregnancy.

Pregnant! Hurrah!



- ✓ Mums-to-be can access clear and independent practical support on eating well as soon as they know they are pregnant.
- ✓ All the health professionals they see in pregnancy offer consistent advice and support on eating well and being a healthy weight.
- ✓ The Healthy Start scheme provides timely nutritional support to all eligible young women and those who are on a low-income, including those who are pregnant.
- ✓ The antenatal visit by a health visitor working in a Unicef UK Baby Friendly Initiative accredited service provides information to support families to make an informed decision on how to feed their baby and details of where they can access practical support after baby is born.
- ✓ Stronger enforced regulations of the marketing practices of formula milk companies mean that pregnant women cannot be advertised to, including through digital channels.

The right to food is enshrined in law, and all families have sufficient funds for an appropriate healthy diet.

Society should enable all families to be active as well as get enough sleep. Babies should have regular tummy time, children aged 1-2 years should be active for three hours a day, and screen time should be restricted.

Baby is born. Congratulations!

Birth to 6 months

- ✓ Baby is born a healthy weight in a Unicef UK Baby Friendly Initiative accredited maternity setting.
- ✓ For any help she might want with infant feeding, mum knows how to access accredited breastfeeding counsellors and supporters through home visits, drop-ins at Children's Centres or Family Hubs and by phone. She also receives support from midwives and health visitors during their home visits in the first few days and weeks, as well as from knowledgeable GPs. All eligible services are Unicef UK Baby Friendly Initiative accredited.
- ✓ Mum can access the support she needs to manage her own weight post-partum.
- ✓ The health visitor, working in a Unicef UK Baby Friendly Initiative accredited service, also visits the family at 3-4 months and 6 months to support families with infant feeding (including feeding responsively), and the introduction of solids, and to offer family support around eating well.
- ✓ Stronger enforced regulations of the marketing practices of formula milk companies mean that families are not influenced or confused by advertising and product placement in pharmacies and shops or via digital and other marketing.
- ✓ The local Unicef UK Baby Friendly Initiative accredited Children's Centre or Family Hub, financed via Government funds to local authorities which are ring-fenced, offers support to new families on infant feeding and signposts to other relevant family support and services.
- ✓ Society and the law support breastfeeding, and mum feels happy feeding her baby outside her home, wherever she needs to.
- ✓ Eligible families can use their Healthy Start food benefits to buy extra cows' milk, fruit, vegetables and pulses to support mum to eat well.
- ✓ Labelling laws mean that families are not encouraged to buy and offer food to their baby before 6 months of age, and stricter regulations around composition, labelling and marketing protect babies from being given unnecessary snacks and high-sugar foods.

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6-12 months

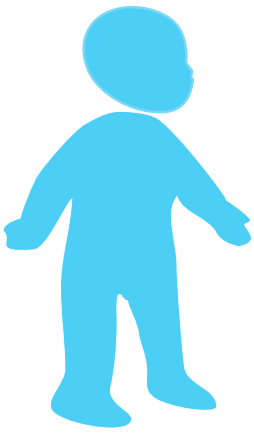
- ✓ Support for breastfeeding in the second half of infancy is available at the local Children's Centres, Family Hubs, GP surgeries or in settings supported by other local and national accredited services working in the local area.
- ✓ Access to independent information and practical support means that families can make informed decisions on when, what and how to offer their baby his/her first foods. Families have the knowledge and confidence to offer baby a good range of cost-effective, minimally processed and unprocessed foods, and to avoid commercial baby foods, drinks and snacks.
- ✓ Better regulation on the composition, marketing and labelling of baby foods and drinks reduces confusion among parents.
- ✓ Children's Centres or Family Hubs that are Unicef UK Baby Friendly Initiative accredited offer wrap-around support to new families, signposting to other relevant support, and services around eating well and cooking.
- ✓ If mum goes back to work while she is still breastfeeding, her workplace supports her to continue, with paid breaks, a clean and comfortable space in which to express breastmilk, and facilities to store expressed milk safely.
- ✓ If baby goes to an early years setting, there are mandatory standards to ensure their food and nutrition needs are met and that all staff support breastfeeding families and understand what 'eating well' means in infancy and early childhood.
- ✓ The health visitor, working in a Unicef UK Baby Friendly Initiative accredited service, offers additional support on eating well at the 1-year visit, provides practical conflict-of-interest-free information on how parents and carers can ensure their child continues eating well in the second year of life, and advises on eating well prenatally and during pregnancy if another baby is planned.
- ✓ The Healthy Start scheme enables lower-income families to continue breastfeeding and provides practical advice on using food benefits for fruit, vegetables, pulses and cows' milk in home-made meals and finger foods for baby.

The right to food is enshrined in law and families have sufficient funds for an appropriate healthy diet.

Society should enable all families to be active as well as get enough sleep. Babies should have regular tummy time, children aged 1-2 years should be active for three hours a day, and screen time should be restricted.

12-24 months

- ✓ If she wants to, mum carries on breastfeeding. She feels able to do so wherever she wishes to and knows where to access breastfeeding support if needed.
- ✓ Mum's workplace continues to offer support for her to express breastmilk at work for as long as she wishes.
- ✓ The early years setting her child attends uses the mandatory early years food and nutrition standards to provide good food and good practice examples to families who use their services. Children get involved in food growing and food preparation from an early age.
- ✓ Better regulations on the composition, labelling and marketing of foods and drinks for young children mean that families are less likely to choose expensive and unnecessary 'growing-up' and toddler milks and other ultra-processed foods and drinks.
- ✓ Children's Centres or Family Hubs which are Unicef UK Baby Friendly Initiative accredited provide a place where families can go and join in programmes which support behaviour change, including promoting good nutrition and oral health (e.g. HENRY).
- ✓ The Healthy Start scheme supports lower-income families with practical advice on how to use food benefits to include more fruits, vegetables, pulses and cows' milk in the diet.
- ✓ The health visitor working in a Unicef UK Baby Friendly Initiative accredited service conducts a face-to-face check at the 2-2$^{1}/_{2}$ year review, measures the child's weight and height, and provides the family with feedback as appropriate. The family is offered support around eating well, including prenatal and pregnancy nutrition support if needed.
- ✓ Baby reaches their second birthday at a healthy weight, and parents are also a healthy weight and prepared for further pregnancies and life as active parents.



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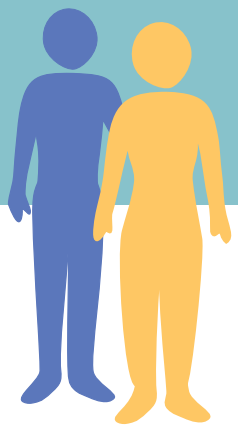


BEFORE PREGNANCY

The status quo

Women's weights

Between 37% and 61% of women of reproductive age (16-44 years) in England are living with overweight (BMI 18.5-25kg/m^2) or obesity (BMI 30kg/m^2 or above) (NHS Digital, 2020a). The prevalence of overweight and obesity among all women over the age of 16 years rises with age and with falling household incomes and shows regional variations, with London and the South East having the lowest rates at 55% and 54% respectively, and the West Midlands and North East having the highest at 67% and 64% respectively (NHS Digital, 2020a).

Why does this matter?

Pre-conception weight impacts on conception, pregnancy outcomes and breastfeeding duration

Women with higher BMIs who are trying to become pregnant take longer on average to conceive, and time to pregnancy increases with the degree of obesity (Poston et al, 2016). Men living with overweight and obesity may also find it harder to conceive, as being overweight may affect the quality and quantity of sperm (NHS, 2021).

Carrying too much weight pre-pregnancy increases the mother's risk of giving birth to a large for gestational age baby and this has the inter-generational effect of increasing the risk that the baby is an unhealthy weight (Yu et al, 2013). In addition, starting pregnancy overweight or obese may have consequences for the health of the mother and her baby. It is important to note that it is being too heavy pre-pregnancy rather than gestational weight gain that is the major cause of any complications (Poston, 2017), and weight loss is not generally encouraged during pregnancy.

Being overweight pre-pregnancy can also impact on breastfeeding. A study of over 17,000 British women found no differences in breastfeeding initiation rates by pre-pregnancy BMI, but women living with overweight and obesity pre-pregnancy were more likely to stop breastfeeding in the first week and were less likely to continue past 4 months, after adjusting for mother's ethnicity, education and age, siblings in the home, presence of step-siblings, smoking, and alcohol use during pregnancy (Campbell and Shackleton, 2018).

How did we get here?

Our environment is obesogenic and this makes some individuals susceptible to weight gain

The causes of obesity are complex and multifaceted. However, it remains generally accepted that the reason for the high prevalence of obesity in the UK population, including among women of reproductive age, is a latent biological susceptibility interacting with a changing environment that includes more sedentary lifestyles and increased dietary abundance (Government Office for Science, 2007).

Gaps in school curricula
Young people do not receive information on healthy pregnancy and healthy weight (or breastfeeding) as part of their personal, social, health and economic education at school.

Lack of societal awareness about the need for pre-conception planning
There is a lack of societal discussion about the benefits of being a healthy weight for pregnancy, and evidence suggests few women prepare for pregnancy (Tommy's, 2021).

Increasing household food insecurity
Links between obesity and food insecurity among women in high-income countries have been well documented (Nettle et al, 2017), and over the past decade there has been increasing food poverty reported in the UK, which was further exacerbated in 2020/21 by the covid-19 pandemic. The Food Foundation estimates that, during the pandemic, 22% of households lost income and that 4.7 million adults experienced food insecurity in 2020 (Food Foundation, 2021).

What can we do better?

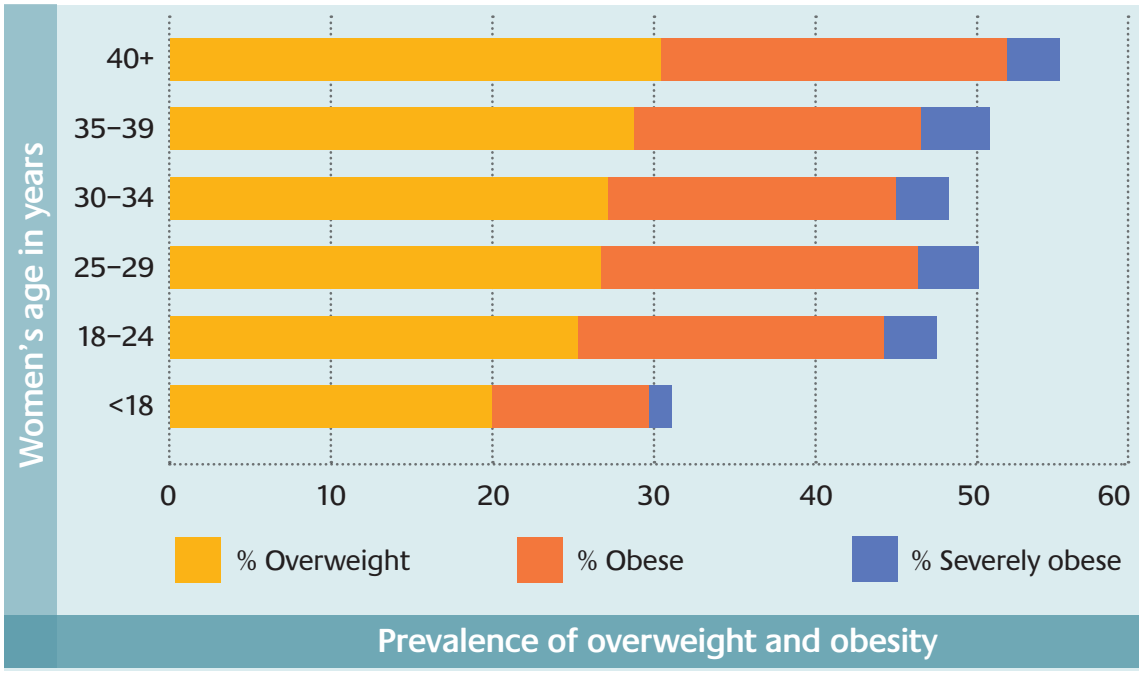
For recommendations on how we could better support families before pregnancy, see *Recommendations* on page 8.

The status quo

Weights of women becoming pregnant

The latest available data on the weight of women at their booking appointment (at about 10 weeks of pregnancy) suggest that around 28% of women are living with overweight and 22% are living with obesity (NHS Digital, 2019). As weight loss in pregnancy is not generally advised, most of these women will remain too heavy through pregnancy and birth, and enter the post-partum period carrying excess weight. Women living in greater deprivation are more likely to be too heavy (in 2017 among those women attending booking appointments, 56% of those living in the most deprived decile were living with overweight or obesity, compared with 40% of those living in the least deprived areas) (Public Health England, 2019a).

Figure 3: *Maternal BMI category at midwife booking appointment by age group in England in 2019*



Source: Public Health England, 2019a.

The diets of pregnant women

There is limited recent national data available on the dietary habits of pregnant women and how this might impact on their pregnancy outcomes. The Southampton Women's Study reported that the dietary practices of women do not change substantially as a result of pregnancy; women with poor diets pre-pregnancy were found to consume poor diets during pregnancy (Crozier et al, 2009). In the UPBEAT study of pregnant women living with obesity in eight ethnically diverse inner-city areas in the UK, maternal diet was characterised into four main diet types (fruit and veg, African/Caribbean, processed, snacks) (Flynn et al, 2016). They reported that the 'processed' diet pattern (characterised by intakes of crisps, chocolate, chips, processed meat and meat products and a number of other foods) and the 'African/Caribbean' diet pattern (characterised by intakes of red meat, cassava, fried and other rice, plantain and other foods) were associated with an increased risk of developing gestational diabetes, but no

association was seen between any of the four diet patterns observed and whether infants were born large or small for gestational age. This study did, however, show that an intensive dietary intervention could improve dietary patterns and highlighted that poor diet was more common in younger women who left education earlier.

The Grown in Wales Study (Garay et al, 2019) looked at dietary patterns associated with birthweight outcomes and reported that women with a more 'health conscious' diet (including, for example, salad, meat alternatives, fish, cheese and yoghurt) were less likely to give birth to babies small for their gestational age than women with a predominantly 'western diet' (including, for example, cakes, snack foods, ready meals and take-aways, soft drinks and starchy foods). These dietary differences did not, however, impact on whether infants were born large for gestational age, and might not be generalisable to England.

More data are needed on links between maternal diet and weight in pregnancy and pregnancy outcome, but it is generally accepted that it is reducing excess weight pre-pregnancy which is particularly important in lowering the risk of delivering a large for gestational age baby.

Why does this matter?

Weight in pregnancy impacts labour, birth, pregnancy outcomes, breastfeeding and the risk of certain diseases in mum and baby

Pregnant women living with obesity may have poorer pregnancy outcomes and difficulties during labour and birth, and they are at greater risk of gestational diabetes and pre-eclampsia (Poston et al, 2016). Gestational diabetes increases the risk of a large for gestational age baby and can put the mother at greater risk of developing type 2 diabetes as she grows older. Pre-eclampsia is associated with a life-long risk of cardiovascular disease, and children born to mothers who have had pre-eclampsia may also inherit this risk.

How did we get here?

Lack of a national strategy encompassing nutrition in pregnancy

In England there is no national strategy which provides a framework for action to improve the diets and nutritional status of pregnant women. This means that there are no strategic actions or targets in place against which to measure improvement in England, no leadership, and no partnership working between agencies. In Scotland, by contrast, there has been a 10-year Maternal and Infant Nutrition Framework for Action in place since 2011 (Scottish Government, 2011).

More women are starting pregnancy too heavy

Two key factors that may contribute to the high prevalence of women of reproductive age living with overweight and obesity are a low public awareness of the importance of health in pregnancy, and the high rate of unplanned pregnancy (Wellings et al, 2013). An increase in overweight and obesity in the population as a whole will also impact on the number of women starting pregnancy overweight.

Increasing household food insecurity

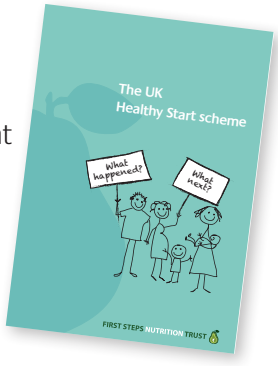
Pregnant women in households experiencing greater deprivation are more likely to be living with obesity, compared to those in less deprived households. For example, in the Born in Bradford study, at 12 months post-partum, women who were food-insecure were more likely to be living with overweight than those who were not food-insecure (Yang et al, 2018). As stated previously, the links between food insecurity and obesity among women have been documented globally for many years (Nettle et al, 2017) and it is likely that increasing food insecurity in the UK, and the impacts of the 2020/21 covid-19 pandemic, may be linked to and exacerbate high levels of obesity among pregnant women.

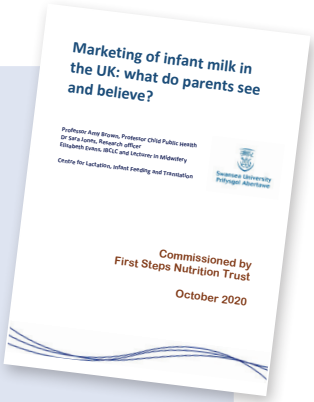
Lack of health professional knowledge and support

Consistent practical advice and support for pregnant women relating to maintaining or achieving a healthy weight is likely to be inadequate in many areas. This is due in part to weaknesses in the training and therefore knowledge and skills of midwives, health visitors, GPs and Family Nurse Partnership staff, and in part due to declining numbers of some essential healthcare workers. Pregnant women have reported confusion, distrust and negative effects associated with antenatal weight management, and women of varying BMI categories express a desire for more engagement with health professionals on the issue of body weight (Swift et al, 2016). Whilst there is NICE guidance which recommends that women should receive advice on healthy lifestyles and weight management (NICE, 2010; NICE, 2015), dieting in pregnancy is generally not advised and there are no formal evidence-based recommendations on the optimal amount of weight to be gained in pregnancy.

Limitations of the Healthy Start scheme

The Healthy Start Scheme in England provides food benefits redeemable for cows' milk, fruit, vegetables and pulses, and first stage cows' milk-based infant formula, and coupons for vitamin supplements, to pregnant women under 18 years of age and to low-income pregnant women and families with children under 4 years of age. Its aims are to act as a nutritional safety net to support increases in the intakes of healthy foods in families with low incomes and among young pregnant women. However, despite a recent increase in the voucher value among other positive changes, the scheme still has a number of shortcomings. It was designed to support healthy eating in pregnancy among young women and those living on low incomes, but declining eligibility and low uptake suggest that many pregnant women may not benefit from the scheme. Healthy Start uptake among teenage mothers has been particularly low, with estimations that about 8 out of 10 young pregnant women are missing out. The majority of food benefits provided for babies are redeemed on infant formula. There is also some evidence that some women previously stockpiled vouchers during pregnancy to spend on infant formula once the baby was born and did not themselves benefit from the additional food that the vouchers could provide. For a full review of the Healthy Start scheme and recommendations for how the scheme can better meet the needs of pregnant women and young families, see *The UK Healthy Start scheme: What happened? What next?* (Crawley and Dodds, 2018).





Infant milk marketing starts in pregnancy

Companies marketing infant milks and baby foods target prospective mothers from early pregnancy onwards in order to gain brand awareness for their products and influence feeding choices. They may do this through offering advice on eating well in pregnancy, and target mothers-to-be through the online searches that they may do related to pregnancy and infancy. Marketing activities include providing classes and other activities and social events: *"Experiential campaigns allow brands to build an image of caring about people's health and wellbeing from the first stages of motherhood. Marketing aimed at mothers-to-be also helps brands to become front of mind for parents before they choose food/drink for their child"* (Mintel, 2019).

Companies use both digital advertising and 'baby clubs' delivering messages by email and post to engage with pregnant women and mothers. Companies give out free branded toys and diaries to parents joining their parenting clubs, and encourage families to use their helplines and information about infant feeding.

More information on how baby food companies target families with online marketing can be found in the report *Why Government should end online infant formula marketing to protect children from overweight*, at www.firststepsnutrition.org/reports

What can we do better?

For recommendations on how we could better support families during pregnancy, see *Recommendations* on page 8.

Current recommendations for infant feeding in the first six months

The global recommendations for optimal infant and young child feeding (WHO and UNICEF, 2003) include that infants should be exclusively breastfed from birth for the first six months of life to achieve optimal growth, development and health. Exclusive breastfeeding means that an infant receives only breastmilk and no other liquids or solids, not even water, with the exception of vitamin/ mineral supplements and medicines where advised. The UK Scientific Advisory Committee on Nutrition (SACN) also recommends that infants should be breastfed exclusively for around the first six months of life (Scientific Advisory Committee on Nutrition, 2018).

Infant formula is the only suitable alternative to breastmilk for babies in the first year of life. The NHS clarifies this recommendation for parents by distinguishing first infant formula, or first milks, from other types of infant milks. See: https://www.nhs.uk/conditions/pregnancy-and-baby/types-of-infant-formula/

The status quo

Birthweight

In developed countries, more and more babies are being born heavier, and the number of babies with a high birthweight has increased by 25% over the last 20 years (Tommy's, 2019). In December 2020 in England, 1 in 10 babies (10.8%) were born large for gestational age (NHS Digital, 2021). Large babies are more likely to be too heavy as children, but there are also risks of later weight gain for babies born small for gestational age, and the latest data for England suggest that about 3% of babies are born too small (NHS Digital, 2021).

How are babies fed in the first six months of life?

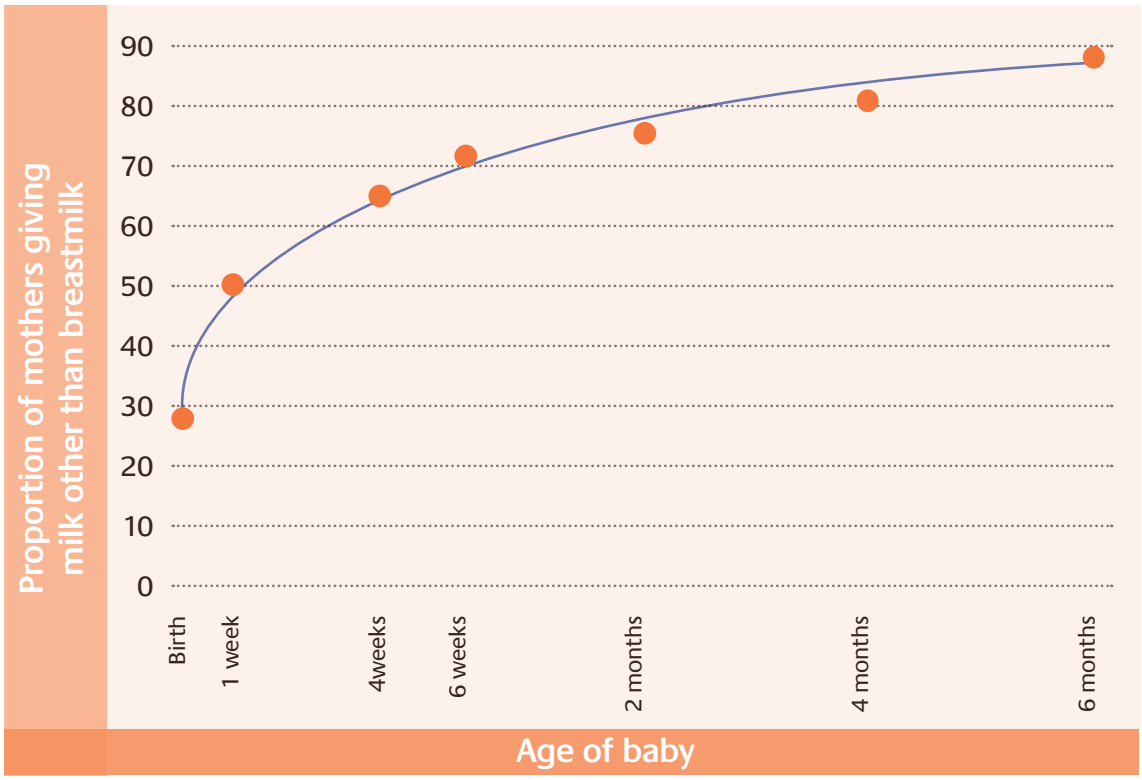
Birth and the first two weeks

According to the most up-to-date data (which has a significant number of missing data points), 57% of babies in England receive maternal or donor breastmilk as their first feed while 1 in 4 (23%) new mothers fed their baby infant formula from birth (NHS Digital, 2021). These data need to be viewed with some caution however, and there will be significant regional variations. The reported incidence of breastfeeding initiation was much higher among women surveyed in England in 2010 for the last Infant Feeding Survey, at 83%, but there was a rapid drop-off so that by two weeks of age only two-thirds of mothers were still breastfeeding (McAndrew et al, 2012). See Figure 4. This survey also revealed that breastfeeding initiation was lowest among younger, white women, women in routine and manual occupations, or those who had never worked (McAndrew et al, 2012). Regionally, the North East had the lowest initiation rate at 65%, whilst 94% of mothers in London initiated breastfeeding.

Infant feeding at 6-8 weeks

Current data from the most recent quarterly reports indicate that just under a half (48%) of babies born in England are still receiving some breastmilk by the age of 6 to 8 weeks, and only a third are exclusively breastfed (Public Health England, 2021). Forty-one percent of babies are fully formula-fed. However, there is substantial regional variation. For those areas that submitted data that passed all quality checks, as few as 28% of babies in Redcar and Cleveland and 36% of babies in Darlington

Figure 4: *Percentage of mothers who had given milk other than breastmilk by baby's age in England in 2010*



Source: McAndrew et al, 2012.

were receiving any breastmilk, compared to 88% of babies in Camden, 80% in Lewisham and 78% in Tower Hamlets. This suggests that much higher rates of breastfeeding are achievable, with higher rates likely to be due to greater practical support as well as population and cultural differences.

Infant feeding at 6 months

The 2010 Infant Feeding Survey remains the most current data available on breastfeeding past the first weeks, and it indicated that only a third of women in England were breastfeeding at 6 months and only 1% were doing so exclusively (McAndrew et al, 2012). The prevalence of breastfeeding at 6 months of age was lowest among younger, white women, those in routine and manual occupations, or those who had never worked (McAndrew et al, 2012). Regionally, the North East had the lowest rate at 19%, whilst 51% of mothers in London were still breastfeeding at 6 months. In Scotland 43% of women were still breastfeeding their baby at 6 months of age in 2017 (Scottish Government, 2018).

Whilst the specific formula milks available for purchase have changed since 2011, the data from the UK Diet and Nutrition Survey of Infants and Young Children carried out in 2011 are the best available on formula-feeding practices nationally. In 2011, only a third (37%) of formula-fed babies aged 4 to 6 months were being fed a first infant formula, while a similar proportion (32%) were being given a follow-on formula, and one-fifth a 'hungrier baby' formula (Lennox et al, 2013). A more recent study among 1,307 mothers in the UK confirms inappropriate use of follow-on formula for babies under 6 months, as close to one-fifth of formula-fed 0-6 month old babies were being given follow-on formula (Brown et al, 2020). This is despite NHS

recommendations to give only first infant formula to non-breastfed or mixed-fed babies up to 12 months of age. Some families are also giving milks such as comfort milks or anti-reflux milks, but information on the use of specialist products is unknown.

How babies are fed formula is also important. Poor and 'unresponsive' formula-feeding practices result from a lack of advice on how much and how often to give formula milk and contradictory information on the same from multiple sources, including product labels (Guell et al, 2018).

Introduction of solids

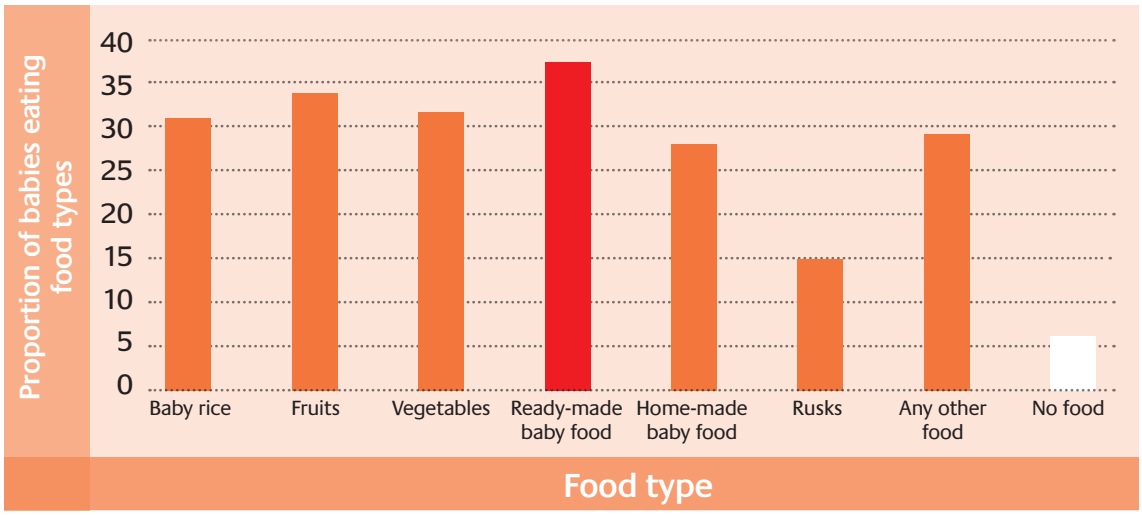
In 2010 in England, only a quarter of babies were given their first foods at the recommended 6 months of age, most having received them much earlier (McAndrew et al, 2012). The proportion of mothers introducing solids at, or before, 5 months of age was highest among younger, white women, those in routine and manual occupations, and those who had never worked. However, data collected in the Scottish Maternal and Infant Nutrition Survey in 2017 showed that 96% of families had waited until at least 4 months of age to introduce solids, with 46% waiting until 6 months, suggesting an improving trend in the age of introduction of solids which may be generalisable to England (Scottish Government, 2018).

Energy intake increases with age after the introduction of complementary foods (McAndrew et al, 2012). The UK Diet and Nutrition Survey of Infants and Young Children showed that formulas contributed the greatest proportion of average daily total energy intake among children aged 4-6 months at 54%, and this was followed by breastmilk at 18%, but then by commercial infant foods and drinks at 17% (Lennox et al, 2013).

Use of commercial baby foods

UK-level data from the 2010 Infant Feeding Survey indicated that when babies were aged 4 to 6 months, mothers were most likely to have given them fruit or vegetables on the previous day (46%) followed by ready-made baby foods (38%), then baby rice (31%) and only then home-made foods (28%) (McAndrew et al, 2012). See Figure 5.

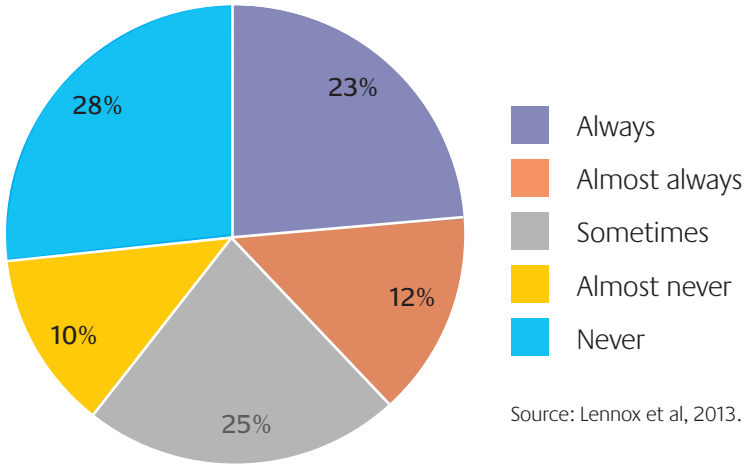
Figure 5: *Foods eaten by 4-6 month old infants in the UK in 2010*



Source: McAndrew et al, 2012.

In 2011 in the UK, nearly three-quarters (72%) of babies aged 4 to 6 months had been given a commercially prepared meal, while for over a third (35%) this was the norm (Lennox et al, 2013). See Figure 6. A third of these babies had also been given commercial snacks. Market research among parents of 0-4 year olds confirm these feeding practices, finding that 71% had given their child a manufactured baby/ toddler finger food or snack (of which 28% at least once a day), and 59% a baby/ toddler food product like a pouch or jar (of which 22% at least once a day) (Mintel, 2019).

Figure 6: *Proportion of 4-6 month olds consuming commercial baby food meals in the UK in 2011*



Source: Lennox et al, 2013.

Why does this matter?

Birthweight is linked to later overweight and obesity

Bigger babies are at higher risk of becoming overweight in childhood. A recent analysis of surveillance data collected between 2015 and 2017 from over 100,000 children in 22 countries in Europe reported a significant increase in overweight at age 6-9 years among high-birthweight babies, adjusting for children's sex and age, maternal education and weight status, and region/administrative division of residence (Rito et al, 2019). Numerous studies have reported associations between maternal obesity and increased adiposity/obesity in the child, which do not seem to be accounted for by socioeconomic status, or other potentially confounding postnatal factors (Godfrey et al, 2017).

There is also a relationship between rapid catch-up growth in infancy and later overweight. Systematic reviews indicate that rapid postnatal catch-up growth is associated with obesity for children and adolescents of all sizes at birth (Matthews et al, 2017). The development of early insulin resistance has been reported in babies born small for gestational age who exhibit rapid catch-up growth (Ong, 2007), and small for gestational age babies with rapid weight gain have also been found to have increased fat mass (Cho and Suh, 2016).

Breastfed babies are protected from becoming overweight

Among many other health benefits, breastfeeding protects against overweight (Victora et al, 2016). Analysis of 2015-2017 surveillance data collected in 22 European countries reported that, compared to children who were breastfed for at least six months, the odds of living with obesity were significantly higher among children never breastfed or breastfed for less than six months (Rito et al, 2019). This study confirmed the influential Lancet Breastfeeding series of 2016 (Victora et al, 2016) which reported a 26% reduction in the odds of overweight or obesity in later life among children, adolescents and adults who were breastfed as babies, from meta-analysis of data from 105 observational studies (Horta et al, 2015). Data from a prospective study in Melbourne reported that infants who were breastfed for six months or more had lower BMI Z-Scores at all ages to 5 years compared with infants breastfed for less than six months, and the difference remained after accounting for child and maternal factors (Zheng et al, 2020).

Data from the UK confirm these findings. For example, British infants who were breastfed for at least the first four months of life had 14% lower odds (adjusted for socioeconomic status and other confounders) of living with overweight at 3 years of age compared with those who had never been breastfed, and the risk of being too heavy reduced significantly with increasing duration of breastfeeding (Hawkins et al, 2009). In addition, the Millennium Cohort Study data revealed that children who were breastfed as infants were less likely to be living with overweight or obesity at 14 years of age (Institute of Education, 2017).

An increasing body of research sheds light on the likely mechanisms in play, indicating that breastmilk supports the development of the baby's microbiome and certain unreplicable elements such as hormones and unique fatty acids set his/her metabolic trajectory in a way which impacts on their later susceptibility to weight gain in an obesogenic environment (Stewart et al, 2018; Turnbaugh et al, 2006; Yu et al, 2019).

Bottle-feeding and formula feeding may promote weight gain

As well as breastfeeding being protective against excessive weight gain, higher than average energy intakes for some 4-6 month old babies, and correspondingly, their higher than average weights, have been linked to both bottle-feeding and formula feeding. Bottle-fed babies cannot self-regulate their energy intake in the same way as breastfed babies have been shown to (Drewett and Woolridge, 1981; Woolridge et al, 1990), as a carer controls the amount of milk on offer and, when not feeding responsively, when to end the feed. Studies show that bottle-fed babies are more likely to be fed and consume larger volumes of milk, to receive excess calories, and to gain weight more rapidly than their breastfed counterparts (Li et al, 2010; Ventura and Hernandez, 2018; Koletzko et al, 2019a; Lakshman et al, 2018).

In a recent longitudinal study in Canada in which breastfeeding was found to be inversely associated with weight gain velocity and BMI at 3 months of age, the associations were found to be dose-dependent, weaker when breastmilk was fed with a bottle, and even weaker when babies were also given formula (Azad et al, 2018).

In a 20-year longitudinal cohort study in Western Australia which found similar protective effects of breastfeeding through infancy and into childhood, the age of breastfeeding cessation and introduction of formula played a significant role in the trajectory of the BMI from birth to 14 years (Oddy et al, 2014). Stopping at 4 months was consistently associated with a higher BMI trajectory, and introduction of a milk other than breastmilk before 6 months, compared with at or after 6 months of age, was a risk factor for living with overweight or obesity at as late as 20 years of age.

A suggested pathway to excess calorie consumption and rapid weight gain in formula-fed infants is the higher protein content of infant formula compared to breastmilk (Koletzko et al, 2019b). Given that some parents of infants under 6 months old feed them follow-on formula and specialised formula, it is also relevant to note that many of these products have higher protein contents than their brand-equivalent infant formula (see www.infantmilkinfo.org).

Early introduction of solids may be linked to higher energy intakes

The 2011 UK Diet and Nutrition Survey of Infants and Young Children reported that 52-59% of 4-6 month olds exceeded the estimated average energy requirements, and 59-66% exceeded the median weight (Lennox et al, 2013). The early introduction of solids, before 6 months of age, may be associated with an increased risk of overweight. A recent systematic review looked at the relationship between the timing of introduction of complementary foods and/or drinks (not including infant formula), and the children's growth, size and body composition (English et al, 2019a). It reported some evidence that the introduction of solids before 4 months of age may be associated with higher odds of overweight and obesity. Data from the UK support this association; British children of the Millennium Cohort Study born in 2000/2001 and followed up at 3 years of age, were more likely to be living with overweight if they were introduced to solid foods before 4 months (Griffiths et al, 2010). In the Canadian study previously mentioned, at 12 months of age breastfed babies given complementary foods at 5-6 months of age were leaner than those given foods earlier (and leaner than formula-fed babies given complementary foods at 5-6 months) (Azad et al, 2018).

How did we get here?

Lack of a national strategy encompassing infant feeding

England has no infant feeding strategy and no infant feeding lead, and therefore there is no comprehensive 'National Infant Feeding Strategy' and implementation plan. In contrast, Scotland, Northern Ireland and Wales all have infant feeding strategies.

England does not have 100% Unicef UK Baby Friendly Initiative accreditation in maternity settings. In 2020, only 47% of babies were born within an accredited maternity service in England and 62% of health visiting services who provide support to new families in England the first months of life were also accredited (Personal communication, Unicef, 2021). A narrative systematic review of the global impact of the Baby Friendly Hospital Initiative (BFHI) on breastfeeding and child health outcomes reviewed data from 19 countries, including the UK (Pérez-Escamilla et al, 2016). Adherence to the BFHI Standards had a positive impact on early initiation of breastfeeding and exclusive breastfeeding at hospital discharge, as well as on 'any breastfeeding' and duration of exclusive breastfeeding. A global systematic review and meta-analysis by Sinha et al reported that BFHI increased breastfeeding initiation by 20% as well as exclusive breastfeeding to 6 months by 49%, and 'any breastfeeding' by 66% (Sinha et al, 2015). Currently only 44% of university-run midwifery courses have accreditation (Unicef UK, 2021).

Inappropriate marketing of formula milks

Weak regulations on the marketing of formula milks and other foods and drinks aimed at infants fail to protect babies and their parents and carers from inappropriate marketing. In the UK, infant formula is seen as a practical and reasonable alternative to breastfeeding. The marketing of formula milks, and the relationships the companies who make them build with women from the start of their pregnancies, continue after the birth of the baby and may undermine mothers' breastfeeding efforts. Mums may receive regular branded emails from companies linking them to websites and information on infant feeding. The provision of information to new mums through company care lines and websites can be misleading, and frequently highlights difficulties around breastfeeding. This marketing activity is made possible by the limited scope of regulations intended to control the inappropriate marketing of formula milks in the UK, and the fact that these regulations are poorly enforced.

Marketing rules in the UK mean that infant formula cannot be directly advertised to the public, so companies market 'follow-on formula', an unnecessary product which is often sold in almost identical packaging, violating regulations. The legal use of claims and price promotions which are not allowed for infant formula, encourages parents to choose follow-on formula over infant formula, even for babies under 6 months old. In 2010, a third (33%) of mothers of 4-6 month olds in England did not know the difference between infant formula and follow-on formula (McAndrew et al, 2012). Of those mothers of babies 4-6 months old who reported giving their baby follow-on formula, 18% said they did so believing it was better for the baby or had more nutrients, 17% said they were advised by a doctor or health visitor, and 13% said they did so based on previous experience. In 2019, the reasons parents gave for choosing follow-on formula for their babies under 6 months old included belief that it was more advanced and better for child health and development, perception that it could help with common problems, because

the advertising helped them feel more informed, and because it can be cheaper (Brown et al, 2020).

The formula milk industry spend on baby milk advertising in the UK in 2018 was estimated at about £13.2 million – a 12% increase on 2017 (Mintel, 2019). In the 2019 UK study among 1,307 mothers with infants under 12 months old, nearly all participants (98%) reported seeing an infant milk advertisement, 67% said they had seen an advertisement for infant formula (even though infant formula advertising is not allowed in the UK) and 96% an advertisement for follow-on formula (Brown et al, 2020). Similar findings were reported in the 2010 Infant Feeding Survey (McAndrew et al, 2012).

Current UK regulations allow companies to advertise their milks to health professionals. However, the content is rarely scientific and factual and there is no mechanism to challenge when misleading and inaccurate information is presented as fact (Westland and Crawley, 2019). Reports from parents often suggest that it was a health professional who recommended a particular infant formula brand or type (McAndrew et al, 2012; Brown et al, 2020).

Paucity of individual support for breastfeeding

Current health service support does not meet the needs of many new mothers struggling to establish or continue to breastfeed. Three-quarters of mothers want to breastfeed (McAndrew et al, 2012). One reason why some may never initiate breastfeeding is a lack of skilled support in the first days after birth. A third of women surveyed in England in 2010 reported not receiving any help putting their baby to the breast in the first few days after delivery. Among those women who stopped breastfeeding after one or two weeks, 80-85% would have liked to have breastfed for longer, and only about one-fifth of these women received help with breastfeeding (McAndrew et al, 2012). About 1 in 10 mothers stopped because they found breastfeeding difficult or exhausting, and insufficient skilled support has been highlighted as a particular issue (Brown et al, 2011a).

The Government's Healthy Child Programme mandates health visitors to undertake five reviews with all families between pregnancy and age 2-2$^{1}/_{2}$ years, and suggests two further reviews at 3-4 months and 6 months. Additional support is recommended for families with additional needs. While the mandated reviews include a new birth visit after 10 to 14 days, this is often too late to identify and support any early breastfeeding challenges. Currently almost 40% of health visiting services in England lack Unicef UK Baby Friendly Initiative accreditation, and few university-run health visiting courses are accredited. Limited local authority funding for health visitor services and substantial loss of the health visiting workforce mean that the delivery of the mandated contacts is threatened in many local areas (Institute of Health Visiting, 2019). The Local Government Association has estimated that 20% of the health visitor workforce has been lost since 2015 (Local Government Association, 2019).

Data collected by Better Breastfeeding in 2018 showed that 142 out of 326 of local authorities in England (44%) experienced cuts to local breastfeeding support (Better Breastfeeding, 2018). In some cases, an entire breastfeeding support service was closed. In other areas the service was reduced either in size or in the quality of support offered. In some areas the public funding for the service (from either the local authority or NHS) ended, but voluntary groups or charities

maintained some support. A reduced workforce in public health and the closure of significant numbers of Children's Centres has also weakened community support for young families. In a review of Children's Centres, the Sutton Trust noted that as many as a third of all centres have closed, with more closures to come, big differences between areas and in the range of services still on offer, centres merging, and loss of the universality that had seen families of all backgrounds using the centres (Smith et al, 2018). The decision by Ofsted to no longer act as a register for Children's Centres has made it harder to track what is happening.

Lack of incentives for breastfeeding among Healthy Start beneficiaries

The Healthy Start scheme has the potential to undermine breastfeeding, despite its original intention to both reduce obesity and support breastfeeding (Crawley and Dodds, 2018). While mothers of breastfed under-1s can use the baby's food benefit to buy cows' milk and/or fruits, vegetables and pulses for themselves and their family, the scheme does nothing to protect, promote, support or incentivise breastfeeding. The ability to redeem food benefits for infant formula alongside the absence of incentives for breastfeeding means that many families still see the benefits as 'milk tokens'. In some families, breastfeeding has not been observed for three or more generations and the provision of 'milk tokens' and state support for formula feeding is embedded.

Poor societal support for breastfeeding

Negative social attitudes, body image issues, conflicting responsibilities and a lack of familial support have all been highlighted as barriers to breastfeeding in the UK (Brown et al, 2011a). These factors can disrupt the responsiveness of breastfeeding, resulting in reduced milk supply and ultimately leading to early cessation (Brown et al, 2011b).

Community-level socio-cultural factors underlie the sharp drop-off in breastfeeding by 6-8 weeks (Brown, 2016). These include a common lack of understanding of normal breastfeeding patterns, normal sleeping and waking patterns, and normal weight gain trajectories in breastfed babies. The fundamental reason is that for generations formula feeding and routinised care has been the cultural norm (Unicef UK, 2013). The benefits of breastfeeding and the intentions of many mothers to breastfeed beyond the first days continue to be undermined by poor practice, poor support and inconsistent, inaccurate and misleading information and marketing, and a lack of necessary legal protection. In addition, a woman's confidence is often weakened, inhibiting her own self-efficacy in her ability to succeed. In England, the absence of a law which directly states that infants can be fed anywhere that they need to be also means that parents fear being challenged if they breastfeed in public.

Lack of training on breastfeeding for the health workforce

Most pre-registration training for health care professionals who work with mothers, infants and young children has many gaps in relation to infant feeding, and breastfeeding knowledge tends to be on the theory rather than the practical aspects of enabling mothers to initiate and continue breastfeeding (WBTi UK, 2016).

Lack of local support on the introduction of solids and responsive feeding

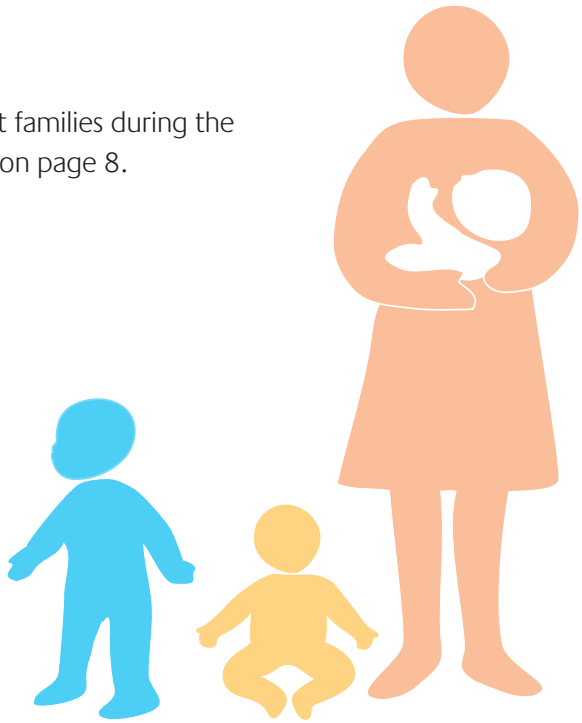
Many families will not have received consistent advice on the introduction of solids and may rely on outdated family knowledge which promotes early complementary feeding. Whilst health visitor reviews at 3-4 months and 6 months are now suggested in the 2021 Healthy Child Programme, these are not mandated, meaning that many areas will have insufficient implementation capacity. Also, a lack of consistent training for health visitors and other health workers who work with young families means that there may be conflicting advice on eating well and the importance of responsive feeding. In addition, Children's Centres where services such as 'cook and taste' classes are run, have often had their opening hours reduced and the scope of services cut, or they have been closed altogether as a result of reduced and unprotected budgets (Smith et al, 2018). Government plans in 2021 for a new network of 'Family Hubs' remain unfunded as this report goes to press.

Poor policy coherence on the age of introduction of solids

Despite public health recommendations to offer infants solids at about 6 months of age, EU regulations which informed UK laws prior to the UK's departure from the EU, allow infant food to be marketed from 4 months of age. Start4Life research published in 2019 found a perception among mothers that the availability of foods labelled as suitable from 4 months suggested that this was a safe time to begin introducing solid foods (Public Health England, 2019b). In a survey of baby food by Public Health England it was reported that more than a third of baby foods and 24% of baby drinks are marketed for children under 6 months (Public Health England, 2019b). In another report on baby food marketed to infants in the first year of life, 45% of foods from the four main manufacturers were marketed for infants from 4 months of age (Crawley and Westland, 2017) and a further study of fruit and vegetable purées in pouches marketed for infants and young children reported that 58% of these products are labelled as suitable for infants less than 6 months of age (Westland and Crawley, 2018).

What can we do better?

For recommendations on how we could better support families during the first six months of a baby's life, see *Recommendations* on page 8.



'Non-responsive' feeding in the first two years increases the risk of overweight

A 2011 systematic review of studies exploring the associations between responsive feeding and child weight status in high-income countries found significant associations between non-responsive feeding and child weight-for-height Z-score, BMI Z-score, overweight/obesity, or adiposity (Hurley et al, 2011). More recently, a systematic review looked at the relationship between child feeding practices from birth to 2 years of age and the children's growth, size and body composition (Spill et al, 2019). From available randomised trial data, it concluded that providing guidance on responsive feeding to mothers to help them recognise and respond appropriately to a child's hunger and satiety cues contributed to normal weight gain and achievement of normal weight compared with children whose mothers did not receive such guidance. This conclusion is supported by another recent systematic review which examined factors affecting responsive infant feeding, and found that recognition of feeding cues, knowledge about feeding, and the advice and support of family and friends enabled responsive feeding, while barriers included the lack of advice and support from health care professionals for formula feeding (Redsell et al, 2021).

The promotion of responsive formula feeding of babies under 6 months of age in the UK has been shown to be effective at reducing milk intakes and slowing weight gain up to the age of 6 months (Lakshman et al, 2018). However, at 8 months of age, average calorie intake was more than 100 kcal/day higher than the estimated average requirement, and the intervention had no effect on weight gain to 12 months, when formula milk was no longer the main source of energy. This highlights the importance of appropriate complementary feeding.

Lack of recent data on maternal nutrition, infant feeding and the diets of infants and young children in the UK

The Infant Feeding Survey was conducted every five years from 1975 until 2010, but was cancelled before the 2015 survey. The main aim of the survey was to provide estimates on the incidence, prevalence, and duration of breastfeeding and other feeding practices adopted by mothers in the UK in the first eight to ten months after their baby was born. It also collected data retrospectively on health behaviours during pregnancy. The 2010 survey (McAndrew et al, 2012) remains the only comprehensive data available on infant feeding in England, but it is now 11 years out of date, whereas the Scottish Maternal and Infant Nutrition Survey gathered data on maternal nutrition and infant feeding in 2017 (Scottish Government, 2018).

While more recent data on infant feeding in England is available from Public Health England, it is limited to initiation of breastfeeding and continuation at 6-8 weeks. A critical shortcoming of this system is that the reporting is voluntary and the data quality for many areas is weak. For example, for the annual report for 2019/2020, 144 out of 149 local authorities voluntarily submitted data for at least three quarters, but only 69/144 passed all three data validation stages (See: https://assets.publishing.service.gov.uk/government/ uploads/system/uploads/attachment_data/file/957253/OFF_SEN_Annual_Breastfeeding_ Statistical_Commentary_2019_2020.pdf)

The Diet and Nutrition Survey of Infants and Young Children (Lennox et al, 2013) was a one-off survey commissioned by the Department of Health and the Food Standards Agency. It provided detailed, quantitative information on the food and nutrient intakes, sources of nutrients, and nutritional status of a representative sample of infants and young children aged 4-18 months from the UK population in 2011, as a basis for developing government policy and measuring progress towards other government objectives. However, these data are now 10 years out of date.

Without more recent survey data on infant and young child nutrition and feeding practices, outdated data on the eating patterns of infants and young children are being used to inform health promotion efforts, which may not be in line with current practices.

In 2019 the Government in England committed to undertaking a new Infant Feeding Survey, and whilst the initial stakeholder consultation meeting in 2020 did not take place because of the covid-19 outbreak, planning for this survey needs to be initiated as soon as possible. The data collected need to be at least as detailed as for previous surveys but with greater emphasis on factors impacting on infant feeding choices, support available, brands and types of infant formula used, and methods of infant formula preparation, as well as the types of other food and drinks given to babies in the first year. There is also a critical need to collect up-to-date data on the food and nutrient intakes, sources of nutrients, and nutritional status of a representative sample of infants in the first two years of life.

Current recommendations for feeding infants from 6 months to 1 year

The global recommendations for optimal infant and young child feeding (WHO and UNICEF, 2003) are that infants should receive nutritionally adequate and safe complementary foods from 6 months of age while breastfeeding continues to up to 2 years of age or beyond. Complementary foods should: be introduced when the need for energy and nutrients exceeds what can be provided through exclusive and frequent breastfeeding; provide sufficient energy, protein and micronutrients to meet a growing child's nutritional needs; be hygienically stored and prepared, and be fed with clean hands using clean utensils and not bottles and teats; and be given consistent with a child's signals of appetite and satiety (i.e. fed responsively); and meal frequency and feeding method should actively encourage the child to consume sufficient food using fingers, spoon or self-feeding.

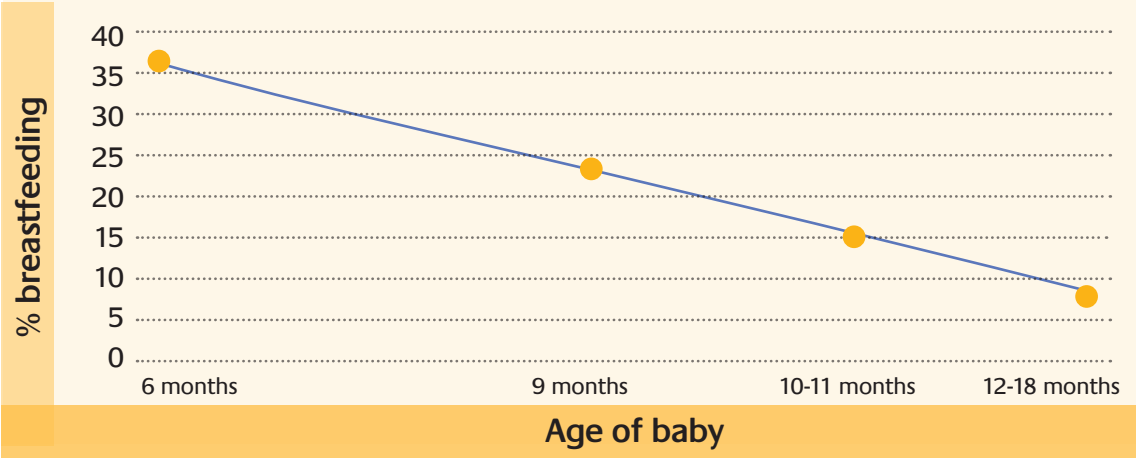
The UK Scientific Advisory Committee on Nutrition (SACN) also recommends that infants should be breastfed exclusively for around the first six months of life, and breastfeeding should continue for at least the first year of life (Scientific Advisory Committee on Nutrition, 2018). The committee advises that most infants should not start solid foods until around 6 months of age, and that a diverse range of solid foods should be introduced in an age-appropriate form at that time. Breastmilk, infant formula and water should be the only drinks offered to children between 6 and 12 months of age. The NHS clarifies this recommendation for parents by distinguishing first infant formula, or first milks, from other types of infant milks. See: https://www.nhs.uk/conditions/pregnancy-and-baby/types-of-infant-formula/

The status quo

How babies are fed at 6-9 months of age

From the best data available, in 2010, at 6 months of age, only a third of babies in England (36%) were still receiving any breastmilk, falling to a quarter (24%) at 9 months (McAndrew et al, 2012). See Figure 7. One in three (34%) mothers who stopped breastfeeding between 6 and 9 months wanted to breastfeed for longer, and a fifth (20%) who stopped did so because they were returning to work or college.

Figure 7: *Prevalence of any breastfeeding at 6-9 months in England in 2010, and 10-11 and 12-18 months in the UK in 2011*



Source: Data for infants 6-9 months taken from the Infant Feeding Survey (McAndrew et al, 2012). Data for infants from 10-11 and 12-18 months taken from the Diet and Nutrition Survey of Infants and Young Children (Lennox et al, 2013).

In 2011, only 22% of formula-fed babies aged 7-9 months old were being fed a first infant milk, while over half (56%) were being given a follow-on formula, and 8% were being given a 'hungrier baby' infant formula (Lennox et al, 2013), despite the UK recommendations to give only a first infant milk for the first year.

Practically all babies have been given solids by 6 months of age, and based on the 2011 UK-wide data, nearly three-quarters (72%) of those aged 7-9 months will have eaten a commercially prepared meal, while for 23% it will be the norm (Lennox et al, 2013). Despite snacks not being necessary for children aged under 1 year, nearly two-thirds (62%) of these babies will be fed a commercial snack. Contrary to popular opinion, the intakes of fruits and vegetables among infants is relatively high (Scientific Advisory Committee on Nutrition, 2018), but where commercial fruit-based products are consumed, the intake of free sugars will also be high.

How babies are fed at 10-12 months of age

By the age of 10-11 months, the proportion of mothers still breastfeeding in the Diet and Nutrition Survey of Infants and Young Children was only 15% (Lennox et al, 2013). Formula-feeding practices remain similar in this age range as for the younger babies: in 2011, only 16% were being fed a first infant milk, while more than half (59%) were being given a follow-on formula, and 5% were being given a 'hungrier baby' milk.

Similarly for the younger babies, 67% of infants have commercially prepared meals at this age, and this is the norm for 18% (Lennox et al, 2013). Sixty percent of babies aged 10-12 months had been fed a commercial snack.

More recent data collected in 2017 in the Scottish Maternal and Infant Nutrition survey suggests that parental preferences for commercial baby foods has not lessened in recent years. Four in ten (41%) parents reported giving their 8-12 month old babies commercial baby foods nearly every day, and the proportion was higher among younger mothers and those in deprived areas (Scottish Government, 2018). In this survey, one in three parents gave 'treat' foods (such as chocolate buttons, crisps, puffs or ice cream) at least once a day, and three-quarters said they gave their babies one or more snacks a day. One in ten mums in this study said they did not know how much food to give their baby. SACN (Scientific Advisory Committee on Nutrition) suggests that UK infants generally exceed their energy requirements and that this is of concern in terms of risk of overweight and obesity in childhood (Scientific Advisory Committee on Nutrition, 2018).

Recent research by Public Health England highlights that many commercial baby foods, particularly the finger foods marketed as snacks, have added sugar or salt, or contain ingredients that are high in sugar or salt (Public Health England, 2019b). Households from all socioeconomic groups buy commercial baby foods. Between a fifth and a quarter of households buy baby meals, with the exception of those who are unemployed or have never worked who buy less. The higher and intermediate managerial, administrative, professional occupations buy the largest proportion of baby finger foods (34%), while the skilled manual occupations buy the largest proportion of baby drinks (29%).

Why does this matter?

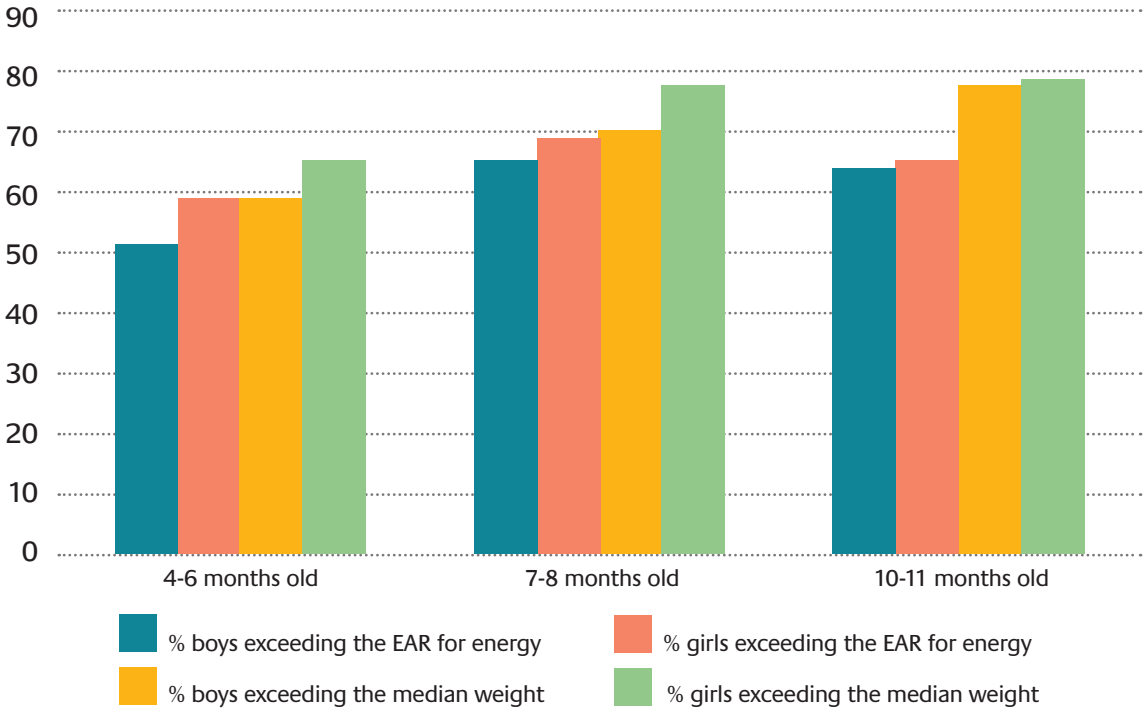
Breastfed babies are protected from becoming overweight and bottle-feeding and formula feeding may promote weight gain

Short durations of breastfeeding matter because formula-fed and bottle-fed babies are more likely to end up carrying excess weight than breastfed babies. Related to this, using inappropriate formulas such as follow-on formula and hungrier baby formula instead of the recommended first infant milks matters because these typically have a higher protein content than first milks (see www.infantmilkinfo.org), which may promote more rapid weight gain.

Excess energy intake promotes weight gain

Suboptimal feeding practices in late infancy, including 'unresponsive' feeding and choosing inappropriate formula milks and reliance on commercial baby foods, matter because they may promote excess intake and weight gain. The proportions of children exceeding the estimated average requirement for energy and exceeding the WHO growth standard median for weight increase with age (Lennox et al, 2013). See Figure 8.

Figure 8: *Proportions of boys and girls aged 4-11 months exceeding their estimated average requirements for energy and their median weights in the UK in 2011*



Source: Lennox et al, 2013.

Poor quality diets in infancy are associated with excess weight by school age

Diet quality matters because diets low in fruits, vegetables and fish in late infancy have been found to be associated with later adiposity: for example, among participants in the Southampton Women's Study (Okubo et al, 2015). In this longitudinal cohort study, data were collected at 6 and 12 months and 3 and 6 years, and showed that children who ate poor-quality diets in infancy were more likely to be overweight by school age. There is also some evidence for a positive association between juice intake and infant weight-for-length and child BMI Z-scores (English et al, 2019b).

Commercial baby foods are frequently high in sugar and their packaging may encourage overeating

Limited regulation relating to the composition, labelling and marketing of baby foods means that families using commercial products are likely to offer soft, sweet foods often with limited nutritional content, as these dominate the market (Crawley and Westland, 2017; Westland and Crawley, 2018; Sparks and Crawley, 2018; Public Health England, 2019b). Widespread use of commercial baby foods matters because while they are marketed as healthy, many are not (García et al, 2019). Some have added sugar and salt, and many contain ingredients that are high in sugar or salt, including processed fruit ingredients such as purées, powders and pastes which are included in the definition of free sugars (Public Health England, 2019b). Two-thirds of commercial baby finger foods are sweet. These products (and in particular processed dried fruit products) have the highest average sugar content across all baby food products and can be as high in sugar as standard biscuits and confectionery (Public Health England, 2019b; Sparks and Crawley, 2018).

Over a third (35%) of baby food products on the market are packaged in pouches (Public Health England, 2019b) and there is concern that the common practice of allowing the child to suck from a pouch (i.e. not using a spoon to feed the product to a baby) might encourage continual feeding (Koletzko et al, 2019c).

How did we get here?

Lack of support for and protection of breastfeeding

Some of the reasons for the drop-off in breastfeeding in the early weeks remain relevant to older infants (Li et al, 2008). In addition, the idea that breastfeeding is only for the first six months has been strongly promoted by companies marketing first infant milks and follow-on formulas. A lack of societal support for breastfeeding remains an issue for parents of older infants, and there is little awareness of the benefits of continued breastfeeding in the first year, and beyond. A lack of legal protections for breastfeeding women returning to work also means that many women find it hard to continue breastfeeding, and confusingly, the Government Nursery Milk Scheme supports formula feeding but not breastfeeding. The scheme permits childcare providers to be reimbursed for the cost of powdered infant formula given to children under 12 months of age (Department of Health and Social Care, 2021).

Inappropriate marketing of formula milks and commercial baby foods and drinks

Many babies being given follow-on formula after 6 months of age have been introduced to it at a younger age (McAndrew et al, 2012), and recent research shows that similar factors influence purchasing decisions in the second half of infancy as in the first half (Brown et al, 2020). Additional marketing techniques target parents of children from 6 months, including labelling follow-on formula as suitable 'from 6 to 12 months' alongside the labelling of first infant milk as 'from birth' with no upper age stipulated, highlighting the higher micronutrient content of the follow-on formula and suggesting (inappropriately) that this is necessary to meet the baby's nutritional needs (see www.infantmilkinfo.org). In addition, the marketing of formula milks as a series of stages suggests to parents that it is necessary to move their baby through each stage (Brown et al, 2020).

According to the 2019 UK baby food and drink marketing report, the range and scope of products on offer has increased over time (Mintel, 2019). Finger foods and snacks are the focus of new product development and saw a 27% increase in sales between 2016 and 2018. Recent market research commissioned by Public Health England suggested that 6 out of 10 portions of commercial baby foods purchased are finger foods, and Start4Life research among mothers highlighted universal use of commercial baby snacks (Public Health England, 2019b). Perceived convenience of commercial products is one driver: *"While a greater number are choosing homemade food, 82% of [surveyed] parents [of 0-4 year olds] are using manufactured baby food or drink or milk. The convenience benefits of these products undoubtedly appeal, with pouches and snacks being viewed as the most convenient of the baby/ toddler food products"* (Mintel, 2019).

In addition, the use of nutrition and implied health claims, and health halo statements, can suggest to parents that products are healthier than their nutrient composition indicates (García et al, 2019). A 2018 review of processed dried fruit snacks advertised for young children in the UK showed how they are marketed with statements relating to the healthiness and tastiness of the product, inappropriately portraying the processed dried fruit as equivalent to fresh fruit (Sparks and Crawley, 2018). A 2017 review of commercially produced jars and pouches of baby foods marketed in the UK highlighted a range of marketing techniques emphasising the convenience and healthiness of their products with phrases such as *'no guilt, just goodness'* and *'as good as home-made'* (Crawley and Westland, 2017). Product names often suggest they provide dietary diversity, and a range of flavours (Public Health England, 2019b) – for example: *"The sheer variety of choice from different cuisines and flavours, which would be challenging for parents to create in the home, is also a selling point, appealing to parents who want their children to have an adventurous palate"* (Mintel, 2019). In fact, product names do not always reflect the range and balance of constituent ingredients and the ingredients used in most products are actually very similar (Public Health England, 2019b).

There is a high and misplaced level of consumer trust in the labelling and marketing statements used by baby food manufacturers, and parents may not deem it necessary to read labels if a product appears to be healthy (Public Health England, 2019b). Given this trust, the presence of products such as drinks, desserts and snacks in the baby food aisle may suggest to parents and carers that they are an expected and appropriate part of the diet (i.e. good choices) for infants and young children.

Lack of legislation to support breastfeeding mothers returning to work

Some mothers may return to work in the second six months of their baby's life and, if they are breastfeeding, they may struggle to maintain their supply given that there is no legislation mandating the provision of paid breastfeeding breaks in England (WBTi UK, 2016). In addition, many workplaces may not have comfortable and safe facilities in which women can express and store their milk.

Lack of mandatory standards for food and drink in the early years

There is no information on the number of under-1s in childcare in England, but in 2019 there were over a million children in private and voluntary nurseries and about 240,000 with childminders (Department for Education, 2019). A survey of nutrition practices in 851 nurseries in England reported that about 7% of children in these settings were aged under 1 year (Neelon et al, 2015). There are currently no mandatory food and nutrition standards for early years settings in England and this survey reported that whilst 56% of nursery managers said they sought nutritional guidance from national reports, 18% sought advice from the internet, 17% from professional childcare associations, 7% from health care providers, and 3% from friends and family. Lack of mandatory standards means that childcare settings may offer inappropriate baby foods without understanding the disadvantages of doing so.

Lack of local support for families on eating well from 6-12 months of age

As for younger babies, the closure of Children's Centres and the reduction in the opening hours and/or the scope of services offered among those that remain open (Smith et al, 2018) contribute to a situation in which parents and carers lack support and advice on how to feed their babies optimally into the second half of infancy. In addition to this, the lack of reliable training for health visitors and other health workers who work with young families means that advice on eating well that is received may be contradictory. Lastly, a decreasing health visitor workforce and recent changes in practice as a result of the covid-19 pandemic may mean that the mandated contact at about 1 year of age is not a face-to-face visit.

What can we do better?

For recommendations on how we could better support families with children from 6 months of age to their first birthday, see *Recommendations* on page 8.

FROM BABY'S FIRST TO SECOND BIRTHDAY

Current recommendations for feeding children from 1 year old

Recommendations on feeding children from 12-60 months of age are currently being reviewed by the Scientific Advisory Committee on Nutrition. The Start4Life programme and NHS webpages provide information on feeding toddlers from 12 months. These pages emphasise that breastfeeding can continue into the child's second year and that children should now be eating three healthy family meals and two healthy snacks a day and can drink cows' milk and water.

The status quo

Weight in the second year of life

Currently there is no national-level collection of weight data from children of this age, and although the personal child health record (the red book) that all families are given at birth provides a record for any measurements taken up to 2 years of age, many families may not have the opportunity to have their child weighed in the second year of life. The mandated health visitor check at 2-2$^{1}/_{2}$ years does not currently include a weight and height measurement. The small amount of survey data that is available, however, does suggest high rates of overweight and obesity among children in the second year of life. Data from a sample of white and Pakistani children in the Born in Bradford Survey indicated that 32% were living with overweight or were at risk of overweight at 2 years of age (Ceballos-Rasgado et al, 2018). Data from the Gemini Study of predominantly white children of higher socioeconomic status indicated that 16% of children between 21 and 60 months of age were living with overweight and obesity (Pimpin et al, 2018).

Diets in the second year of life

UK survey data from 2011 indicated that less than 1 in 10 babies (8%) were still receiving some breastmilk at 12-18 months of age, while 16% were being given follow-on formula and 18% were being given drinks marketed as 'growing-up' milk (Lennox et al, 2013). This survey also reported that the proportion of 12-18 month olds exceeding their estimated average energy requirements was 88%, and over three-quarters (77-78%) exceeded the median weight (Lennox et al, 2013). These figures are higher than for the younger age groups, highlighting how overweight increases with age.

Some data on food and nutrient intakes are collected in the National Diet and Nutrition Survey (NDNS) for children aged 18 months to 3 years, but samples are small. The average energy intake amongst children 1$^{1}/_{2}$-3 years old in the last NDNS was 1,084kcal/day (for comparison the estimated average requirement for energy for children aged 1-2 years old is 1,003kcal/day), but the mean intake among those in the top 2.5 percentile was 1,660 kcal/day (Food Standards Agency and Public Health England, 2019). The Gemini twin cohort study mentioned above also reported on dietary intakes (Syrad et al, 2016) and found that protein intake was three times higher than recommended for 2 year old children, and energy intake was on average 7% higher. This is important because even a small, sustained increase in intake can lead to excessive weight gain over time. Recent data are not available for children from more deprived households, though it is likely that these children also consume diets higher in energy than is recommended.

The most recent National Diet and Nutrition Survey data (2014/15-2015/16) shows that just 13% of 1½-3 year-olds are meeting the government recommendation for free sugars intake of no more than 5% of total energy (Food Standards Agency and Public Health England, 2019), and average daily sugar intake for children aged 1½-3 years is 11.3% of total energy. The majority of sugar in the diets of young children comes from cereal and cereal products, soft drinks and fruit juices, and sugar, preserves and confectionery (Public Health England, 2019b).

The 2011 National Diet and Nutrition Survey reported that close to half (44%) of all children aged 12-18 months were consuming commercially prepared meals, 42% were given packaged snacks, and a third (32%) had eaten an adult ready meal (Lennox et al, 2013). Mean daily fruit and vegetable consumption among children of the same age was significantly lower in both the routine and the manual and intermediate socioeconomic categories compared to the managerial and professional category, and significantly lower in South Asian children and children of 'other' ethnicity compared to white children (Lennox et al, 2013). Whilst links between consumption of fruits and vegetables and adiposity are complex, it has been reported that an early liking for fruit and vegetables predicts later intake, and that children eating more fruit and vegetables have lower BMI at age 7 (Fletcher et al, 2016). Despite increasing need as food insecurity rises, fewer low-income families in England are receiving Healthy Start benefits, which would allow them to buy more fruit and vegetables (Crawley and Dodds, 2018).

As outlined previously, recent research (Mintel, 2019; Public Health England, 2019b) highlight that current preferences and practices probably remain similar to those captured in the 2011 National Diet and Nutrition Survey.

Why does this matter?

Persisting excess energy intake into the second year continues to promote weight gain
Poor diets and feeding practices persist in the second year of life, continuing to promote excess intake and weight gain and to drive high levels of overweight. Despite limited data on the weight of children between 12 and 24 months of age, it is likely that even by this age a significant proportion of children are already on their journey to living with overweight or obesity by the time they start school.

Ultra-processed drinks and foods marketed from 12 months are unhealthy
The popularity of drinks marketed as 'growing-up' and 'toddler milks' matters for several reasons, including their sweetness compared to cows' milk (First Steps Nutrition Trust, 2021). The consumption of easily absorbed sugars can stimulate excessive postprandial hypoglycaemia and insulinaemia, which may be linked to risks of obesity, type 2 diabetes and coronary heart disease (Brand-Miller et al, 2013).

The continued popularity of commercial foods matters because many processed foods marketed for children aged from 1 year and up and promoted as healthy, are not. For example, a recent cross-sectional study in the UK found that the use of cartoon characters and nutrition and health claims were common marketing techniques (García et al, 2019). However, three-quarters of products which claimed 'one of your 5-a-day' were made up of less than 80g of fruit and vegetables. Sugar content was high in fruit snacks, cereal bars and cereals and, overall, 41% of the products were classified as less healthy according to the Ofcom Nutrient Profile Model.

The contribution of snacks to excess energy intake is a concern in all age groups (Public Health England, 2019b).

How did we get here?

Lack of a national strategy encompassing young child feeding

There is no outcome-based national strategy that provides detail on best practice in infant and young child feeding and which can link with the Healthy Child Programme and other initiatives in the early years.

The obesogenic environment

One systematic review reported that the following parental factors increased the extent to which the diets of young children (aged 0-6 years old) were obesogenic: negative parent, family or peer modelling; lack of knowledge; time constraints; using food as reward; affordability; and concerns about a child's health (Mazarello Paes et al, 2015). Child preferences also increased intake. Environmental factors increasing intake included: availability, advertising, and societal, cultural and preschool or childcare influence. Qualitative research undertaken in London and Cornwall confirmed some of these findings, suggesting that the poor eating habits of many preschool children may be the product of poor affordability and a lack of time (Hayter et al, 2015).

Increasing household food insecurity

As highlighted in relation to women's weights, there are known links between food insecurity, poor diets and obesity. Data from the Born in Bradford study showed that food-insecure mothers and their children at 12 and 18 months post-partum had diets of poorer quality with fewer vegetables and higher consumption of sugar-sweetened beverages (Yang et al, 2018). Significant cuts to local authority spending, reduced by 23.4% per person on average between 2009-2010 and 2014-15 alone (Innes and Tetlow, 2015), have limited support to families in difficulty as support via Children's Centres and other public health preventative services has been negatively affected. Substantial cuts to local services have hit the more deprived local authorities in the UK hardest (British Medical Association, 2016). Food insecurity has been exacerbated by the covid-19 pandemic and whilst data from children is not yet available, it is likely that the diets of infants and young children have been negatively impacted in terms of the sorts of foods and amounts of foods they have been offered. There is evidence that food insecurity results in stress and depression among caregivers and lower academic achievement and poorer scores for inter-personal skills and self-control and behaviour among young children (Crawley and Dodds, 2018). Links between food insecurity and overweight in young children have not been documented, but it is likely that poorer diets will have a negative impact on weight trajectories.

Inappropriate marketing of foods and drinks for young children

Poor regulation fails to protect young children from inappropriate marketing of unhealthy foods and drinks, and the marketing of such products to children in their second year, continue as previously described for infants. Added to this, children are increasingly targeted directly through use of cartoon characters on foods such as yoghurts and breakfast cereals. It is known that popular brand mascots and licensed media characters are overwhelmingly used to promote foods high in added sugars, salt and fat which contribute to childhood obesity (BEUC, 2017). Even before a child has learnt how to read, they can readily recognise brands (McAlister and Cornwell, 2010). This is important as some studies have shown that a child's knowledge of food brands can be a significant predictor of their BMI (Cornwell et al, 2014). Characters can influence diet-related behaviours of children, especially with regard to energy-dense and nutrient-poor food (Kraak and Story, 2014).

Drinks for young children marketed as 'growing-up milks' and 'toddler milks' are offered by infant milk manufacturers as an alternative to, or to complement, whole cows' milk for toddlers from about 1 year of age (First Steps Nutrition Trust, 2021). For healthy children there is no rationale for giving these milks; the NHS recommends that children who are not being breastfed receive full-fat cows' milk as the main milk drink and vitamin drops containing vitamins A, C and D every day. The proliferation of these ultra-processed fortified milk drinks alongside misleading labelling and marketing is likely to be a key reason for their popularity among parents and carers of young children, including among childcare providers.

Lack of mandatory standards for food and drink in early years settings

Many children attend childcare in the second year of life and are provided with food and drink during the day, which for some children may represent the majority of their food on the days they attend. The Nutrition in Nurseries study previously mentioned (Neelon et al, 2015) reported that whilst many nursery managers reported good choices and behaviours around food, there was significant variability. Nearly a fifth (18%) of the nurseries offered fruit and vegetables fewer than two to three times per week, and only 65% provided them every day, and provision was related to proximity to a supermarket (Burgoine et al, 2017). Behaviours such as sitting with children during mealtimes, providing small servings and offering more if needed, and not expecting children to clean their plate were observed in less than two-thirds of nurseries, whilst only about a quarter diluted fruit juice and did not serve flavoured milk, and over 80% served squash (Neelon et al, 2015).

Lack of local support on eating well in the second year

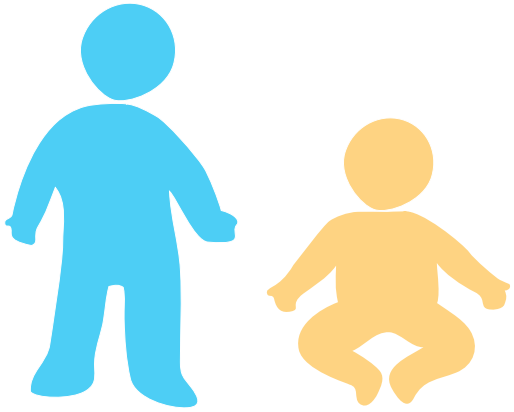
Many of the issues previously reported as affecting how babies are fed also affect children into their second year: a decline in the number of Children's Centres and services and the reduced numbers of health visitors mean that parents and carers cannot access support around eating well in the second year, or parenting programmes designed to reduce overweight in young children. In addition, after infancy, no height and weight measurements of children are taken until they start primary school.

Lack of consistent parenting interventions to address obesity in childhood

A recent study in Leeds analysed data from England's National Child Measurement Programme over 2009-17 and found that the proportion of children entering primary school (aged 4 and 5) already living with obesity fell from 9.4% in 2009-10 to 8.8% in 2016-17 (Rudolf et al, 2018). The reduction was greater among the most deprived children, from 11.5% to 10.5% over the period, but it also occurred among affluent children (6.8% to 6.0%). The results equated to 625 fewer reception class children living with obesity in 2016-17 than in 2009-10. The authors hypothesised that Leeds' citywide childhood obesity strategy, implemented in 2009 and focusing on infants and preschool children, might have accounted for the improved trends. At its core was the delivery of 'HENRY', a preschool obesity prevention intervention that trains health and early years' practitioners working with young families in its approach, along with a range of programmes for parents and young children in community settings. In Leeds, HENRY was primarily implemented in Children's Centres in the city's most disadvantaged neighbourhoods, providing a putative explanation for the reduction in obesity observed in children in reception classes. There are very few programmes like HENRY and coverage is low nationally.

What can we do better?

For recommendations on how we could better support families with children from their first to their second birthday, see *Recommendations* on page 8.



STARTING SCHOOL

The reality of the situation given the status quo, is that in four to five years' time, at least one in four babies conceived in 2021 will still have a weight classed as overweight or obese by the time they start primary school. Overweight and obesity in childhood tracks into adulthood and can perpetuate an unhealthy intergenerational cycle. Failure to act now will have implications not just for this generation, but for future generations.

What can we do better?

As outlined in this report, we can do better, but only if we acknowledge the importance of population-level preventative efforts which start early, with parents-to-be, pregnant mothers and their newborn babies. Focusing on individual-level actions is insufficient, and starting at school age is too late.

A critical recommendation above all others, is to improve leadership and strategy on infant and young child feeding. The Government should appoint a permanent, multi-sectoral maternal, infant and young child nutrition strategy group and develop, fund and implement a national strategy to improve mothers' diets and infant and young child feeding practices. We believe that this and the other actions we recommend on pages 8-11 can change the status quo and ensure that we do succeed in halving childhood obesity by 2030.

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