

Childhood Obesity – Joint Strategic Needs Assessment

Executive Summary

We now have considerable information on childhood obesity in Birmingham. Successive cohorts of children have been measured from the 2006/07 school year at Reception (age 4-5 years) and Year 6 (age 10-11 years) as part of the National Child Measurement Programme (NCMP).

Most recent data shows a rise in obesity at both Reception and Year 6 with a growing gap between Birmingham and the national average. Current obesity prevalence is 12.0% at Reception and 24.4% at Year 6

Reducing childhood obesity will require actions in three areas:

Environment – By using Council leadership in changing the local environment through policy changes.

Behaviour – By implementation of universal behaviour change to increase healthy eating and physical exertion in schools.

Opportunity – By increasing local opportunities for healthy eating and physical exertion by children.

The achievement of the above will require considerable leadership and effort as well as the appropriate use of resources. However, reversal will not happen overnight, indeed it will probably take some time to be seen, probably over at least 5 years. Any intervention has to be universal as the problem is across the city

1.	Scope
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This document forms part of the Joint Strategic Needs Assessment (JSNA) for Birmingham and is intended to explore the issue of Childhood Obesity within Birmingham to inform strategic planning over the short term (3-5 years) and the longer term (5-10 years). This part of the JSNA provides an evidence base to inform the Health and Wellbeing Board's Childhood Obesity Strategy, as well as supporting commissioning decisions about service planning and design.

2.	Background
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2.1 Introduction

Obesity impacts on the quality of people's lives in many ways, not only their physical health but also their wellbeing and economic productivity. The financial cost of obesity to Birmingham amounts to £2.6 Billion per year including costs to the NHS, social care and the wider economy. For health alone, it increases the risk of developing many chronic diseases such as diabetes, heart disease and cancer.

Over the past three decades the prevalence of overweight and obesity across the population has increased substantially, especially in children. Preventing the next generation of adults becoming obese is an important priority for the economic and physical health of Birmingham.

Overweight and obese children have significant reductions in quality of life and suffer more teasing, bullying and social isolation. 85% of obese children become obese adults and are likely to reduce their life expectancy by 9 years. The growth in childhood obesity means that today's children are unlikely to live as long as their parents.

Obesity occurs as a consequence of long term excess energy consumption relative to an individual's energy use leading to an accumulation of excess fat. This energy balance is affected by an individual's genetic makeup and their choices as well as their surroundings, opportunities and life conditions.

The multiple determinants of obesity mean that tackling it requires coordinated action across society. Birmingham has made progress to tackle obesity with national recognition for interventions such as Be Active, Lighten Up and Villa Vitality. However, the impact of these interventions alone is inadequate to make a difference, given the change in the environment over the last 30 years.

2.2 Policy and Future Targets

The Health and Wellbeing Board have agreed an ambition to reduce excess weight in children over the next five years until 2017/18, this relates to indicator 2.6 of the Public Health Outcomes Framework. Data for whether the city has achieved its ambition is available in the December following the completion of the school year, so whether or not this goal has been achieved will be known in December 2018.

It should be noted that this ambition is to reduce the percentage of children classified as overweight or obese in 4-5 year olds and 10-11 year olds and not just to reduce the percentage that are obese.

Table 1 - Excess weight ambition and expected prevalence 2017/18

Age group	Value 2011/12	Ambition 2017/18	Expected value 2017/18	Gap from expected to ambition 2017/18
4-5 year olds	24.4%	22.6%	26.0%	3.4%
10-11 year olds	40.0%	33.9%	45.2%	11.3%

*Expected values based on projections from data 2006/07 to 2011/12

These are ambitious targets and require a reversal of the recent trend of rising childhood obesity. This will require a strong commitment from all organisations involved in delivering on key areas of environment, behaviour change and increased local opportunities for healthy eating and physical activity to achieve this goal.

3.	Drivers of obesity
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Obesity is caused by an imbalance between energy intake and expenditure; or eating more calories than are expended through physical activity over a continued period. To prevent and reduce obesity requires a sustained reduction in calorie intake alongside an increase in activity.

Changes to society over the last 50 years have resulted in individuals becoming less active and having easy access to relatively low cost 'fast food', which has caused a rise in obesity. Factors impacting activity levels include labour saving devices, increased car ownership, perceived safety concerns and technological entertainment such as computers and televisions. Impacts on changing eating habits include less time and skills to cook and grow food, increased ready meals, bulk shopping habits, food advertising, more eating outside the home, increased availability and hence consumption of calorie dense snacks and soft drinks and increased portion sizes. Changes in social norms have impacted on both eating and activity levels.

Factors driving our obesity epidemic fall into 3 categories:

- **Environment** – we have an environment that encourages low physical effort, with more car journeys at the expense of walking etc. We have allowed unhealthy food options to proliferate in our society, often at the expense of healthy options, especially close to schools.
- **Behaviour** – we have adopted behaviour that complements our environment, especially concerning eating high-calorific foods. This is often driven by evidence-based marketing.
- **Opportunity** – we have developed few opportunities for children to undertake appealing physical exertion or enjoy healthy food options, especially early in life.

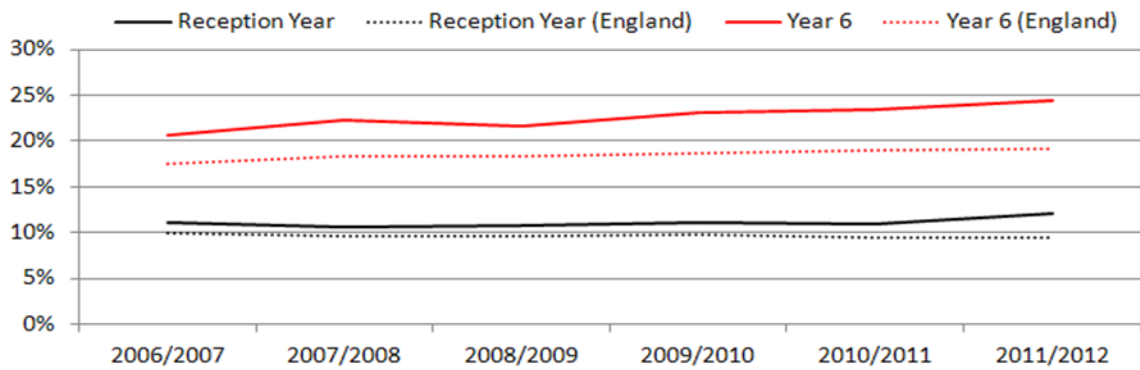
Whilst changes to lifestyle are ultimately the responsibility of the individual, society plays a significant role and therefore local and national government, health organisations and businesses have a role to play in supporting communities to make health choices.

4.	Recent Trends
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The prevalence of childhood obesity in Birmingham has been increasing in recent years. Additionally, the gap between Birmingham and England has been increasing.

Figure 1 - Trends in childhood obesity in Birmingham and England 2006/07 to 2011/12

Trend in Children's Obesity: Reception Year				Trend in Children's Obesity: Year 6			
Year	Obese %	England %	Gap	Year	Obese %	England %	Gap
2006/2007	11.1%	9.9%	1.2%	2006/2007	20.6%	17.5%	3.1%
2007/2008	10.7%	9.6%	1.0%	2007/2008	22.2%	18.3%	3.9%
2008/2009	10.8%	9.6%	1.2%	2008/2009	21.5%	18.3%	3.2%
2009/2010	11.2%	9.8%	1.3%	2009/2010	23.2%	18.7%	4.4%
2010/2011	10.9%	9.4%	1.5%	2010/2011	23.4%	19.0%	4.4%
2011/2012	12.0%	9.5%	2.5%	2011/2012	24.4%	19.2%	5.2%



5.	Who is Most at Risk?
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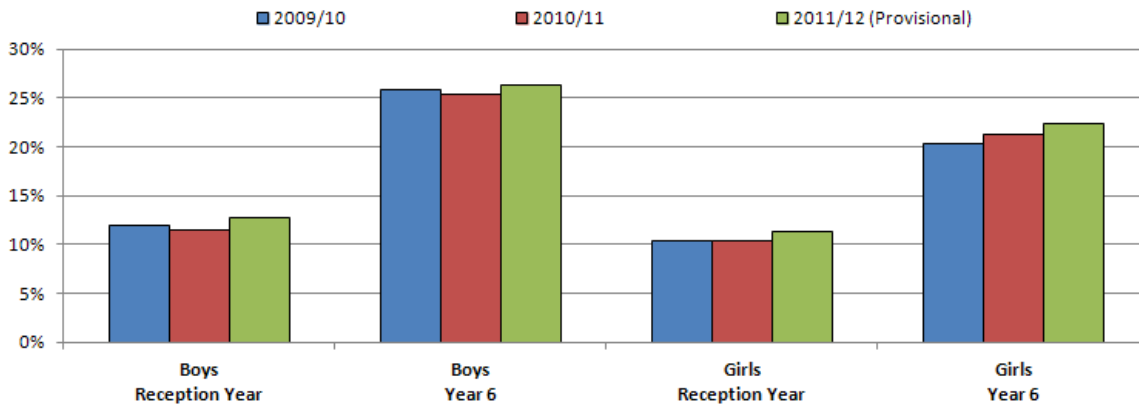
Childhood obesity is an issue across the city but there are particular groups who are more at risk than others. The sections below outline the risks by gender, ethnicity and deprivation.

5.1 Gender

Obesity prevalence is higher among boys than girls at both reception and year 6

Figure 2 - Childhood obesity 2009/12 in Birmingham by gender

	Boys Reception Year	Boys Year 6	Girls Reception Year	Girls Year 6
2009/10	12.0%	25.8%	10.3%	20.3%
2010/11	11.4%	25.4%	10.4%	21.2%
2011/12 (Provisional)	12.7%	26.3%	11.3%	22.4%

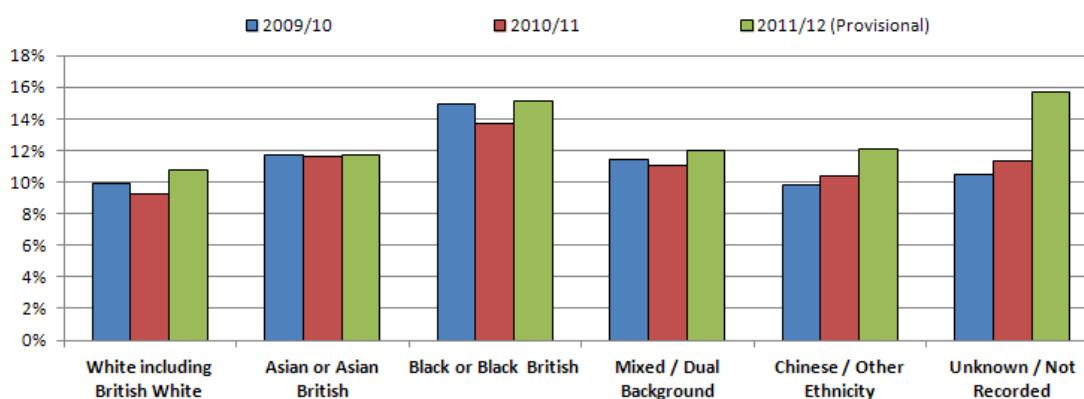


5.2 Ethnicity

Obesity prevalence is highest in Asian and Black groups, in both Reception and Year 6.

Figure 3 - Childhood obesity in Reception 2009-12 in Birmingham by ethnicity

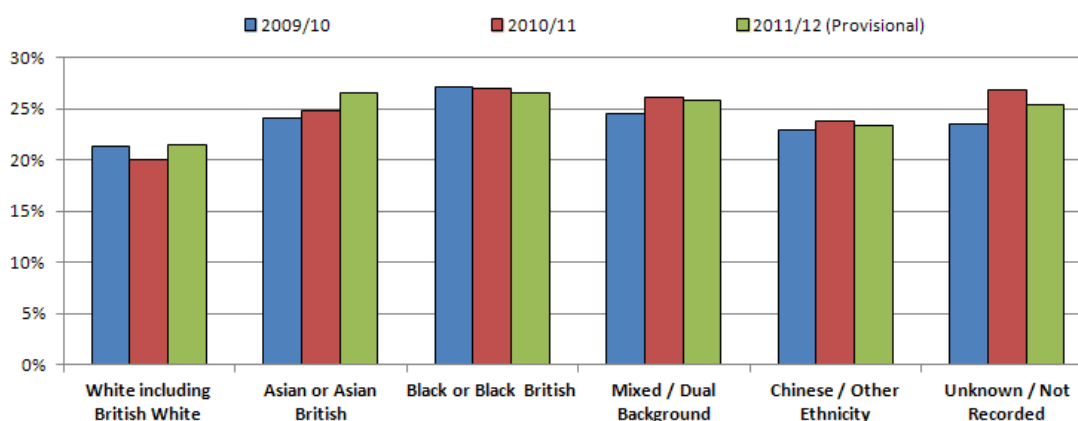
	White including British White	Asian or Asian British	Black or Black British	Mixed / Dual Background	Chinese / Other Ethnicity	Unknown / Not Recorded
2009/10	9.9%	11.7%	15.0%	11.5%	9.8%	10.5%
2010/11	9.3%	11.6%	13.7%	11.1%	10.4%	11.4%
2011/12 (Provisional)	10.8%	11.7%	15.1%	12.0%	12.1%	15.7%



i. Year 6

Figure 4 - Childhood obesity in Year 6 2009-12 in Birmingham by ethnicity

	White including British White	Asian or Asian British	Black or Black British	Mixed / Dual Background	Chinese / Other Ethnicity	Unknown / Not Recorded
2009/10	21.3%	24.0%	27.1%	24.5%	22.9%	23.4%
2010/11	20.0%	24.8%	27.0%	26.1%	23.8%	26.9%
2011/12 (Provisional)	21.4%	26.5%	26.6%	25.9%	23.4%	25.4%



5.3 Deprivation

Obesity shows a strong association with deprivation, which remains through the years. In children aged 4-5 there appears to have been a rise in obesity amongst the most deprived in 2011/12. In year 6, the most deprived quintile nationally also appears to be showing a steady rise in obesity rates.

i. Reception Year

Figure 5 - Childhood obesity in Reception 2009-12 in Birmingham by national deprivation quintile (Index of multiple deprivation 2010)

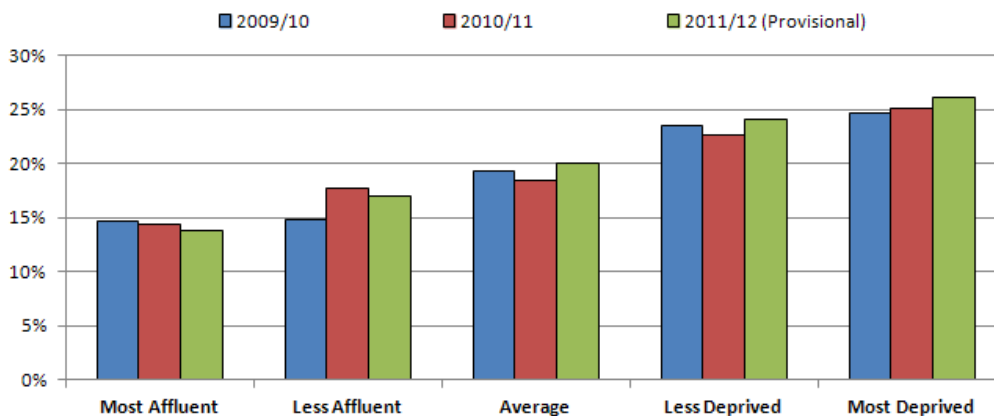
	Most Affluent	Less Affluent	Average	Less Deprived	Most Deprived
2009/10	5.8%	9.7%	7.8%	9.7%	12.3%
2010/11	5.1%	5.6%	8.4%	10.7%	11.9%
2011/12 (Provisional)	4.9%	8.5%	9.8%	10.5%	13.2%



ii. Year 6

Figure 6 - Childhood obesity in Reception 2009-12 in Birmingham by national deprivation quintile (Index of multiple deprivation 2010)

	Most Affluent	Less Affluent	Average	Less Deprived	Most Deprived
2009/10	14.7%	14.9%	19.3%	23.5%	24.6%
2010/11	14.4%	17.7%	18.5%	22.7%	25.1%
2011/12 (Provisional)	13.8%	16.9%	20.1%	24.1%	26.1%



6. How do we compare to our peers?

Birmingham’s current position nationally ranks Birmingham as having:

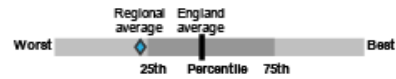
- The 306th highest rate of obesity at reception in England (of 324 Local Authorities); this is poorer than our position in 2010/11 (278th) and in 2009/10 (276th)
- The 311th highest rate of obesity at year 6 in England (of 324 Local Authorities); this is poorer than our position in 2010/11 (301st) and in 2009/10 (302nd)

Note: Data for Isles of Scilly and City of London is unavailable.

Figure 7 – 2011/12 childhood obesity data compared to national and regional averages

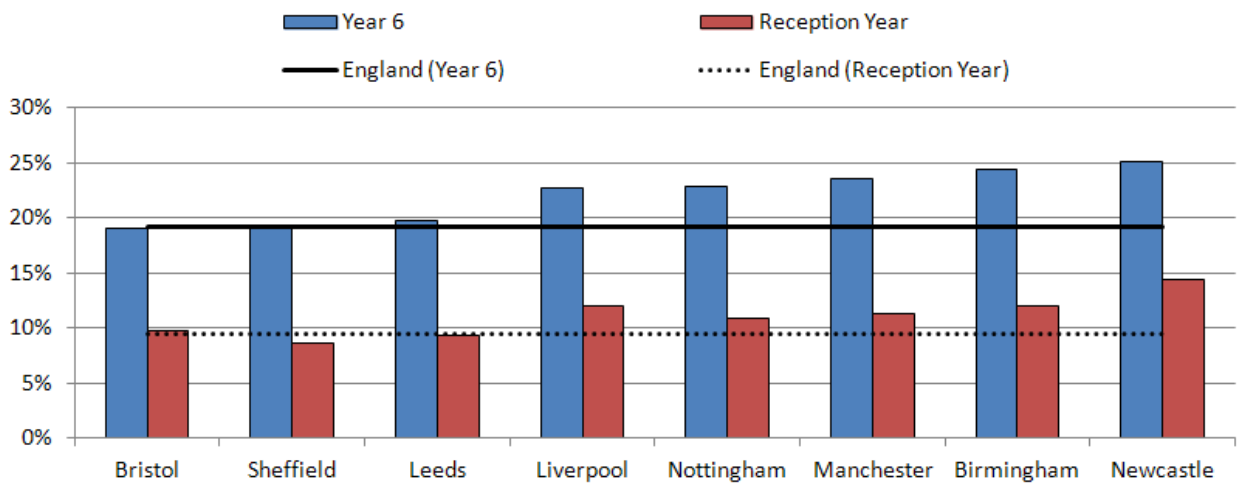
Key:

- Significantly better than England average
- Not significantly different from England average
- Significantly worse than England average
- No significance can be calculated



Indicator	Local Value	Eng Avg	Eng Worst	Eng Best	England Range
1 Children's Obesity: Reception Year	12.0%	9.0%	14.5%	4.6%	
2 Children's Obesity: Year 6	24.4%	18.3%	28.5%	10.3%	

Figure 8 - 2011/12 Childhood obesity compared to other core cities



Birmingham has the 3rd highest obesity rate of the core cities at reception and 2nd highest rate at year 6. This is an improvement from 2010/11 where our performance was the worst amongst the core cities for both reception and year 6.

7.	What we know about what works and what doesn't
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International evidence suggests that the population rise in childhood obesity can be halted and rates can be reduced. The evidence suggests that three aspects need to be addressed, namely environment, behaviour and opportunity (see section 8). However reversal will not happen overnight, indeed it will probably take some time to be seen, probably over at least 5 years.

Any intervention has to be universal as the problem is across the city – even the most advantaged areas have significant problems (Linde and Jeffrey 2010).

Policy approaches to prevent obesity generally show greater cost effectiveness than health promotion or clinical interventions (Vos 2010; Carter 2009). No intervention, however effective will be sufficient to reverse the obesity epidemic in isolation.

Successful reduction of childhood obesity requires community wide approaches involving a wide range of partners (The Foresight report 2007, DH 2011, NICE 2012).

Obesity is caused by an imbalance between energy intake and expenditure; or eating more calories than are expended through physical activity over a continued period. To prevent and reduce obesity requires a sustained reduction in calorie intake alongside an increase in activity.

The focus on improving diet should be on reducing fat and sugar intake, increasing fruit and vegetable intakes, regular eating patterns and portion size control; excess calories consumed in beverages is a particular concern.

Increasing physical activity needs to compensate for the change in calorie expenditure arising due to increased technology such as the car, labour saving devices and sedentary leisure activities such as TV and computer games. Emphasis should be on reducing sedentary behaviours as well as incorporating aerobic and strength activities into a regular pattern of behaviour. There is evidence that overcoming obesity in children requires physical exertion to the point of breathlessness.

Interventions should start early in life when there is a high level of parental control and eating and activity patterns and preferences are being established (NICE 2006).

The jury is out about the protective effects of breastfeeding on childhood obesity, although we do know that breastfeeding is associated with slower infant growth, improved appetite regulation and reduced maternal obesity, all of which are associated with reduced risk of

childhood obesity. The prevalence of breastfeeding in the city is lower in more deprived groups, with 57% of those in the most deprived quintile nationally breastfeeding at 6-8 weeks, compared to 68% in the most affluent quintile (2009-2012).

Reducing obesity across a population needs to focus on prevention rather than treatment. There are evidence-based interventions to treat obesity in children who are already obese; however take up of treatment programmes is low. Feedback shows that such programmes can lead to considerable stigma and resentment. Modelling has revealed that we would need to double our programme, fill all places and deliver the trial results to have a chance of reducing obesity rates by 1%. This would cost an additional £0.5 Million per year.

We need to offer such programmes in the city for those children that seek help. However by itself it will not deliver population-level change which is needed in the city.

8.	What should we be doing?
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Childhood obesity is a key priority of the Health and Wellbeing Board. The Board wants to be ambitious in this area and is contemplating a significant reduction in obesity at Reception and Year 6. To achieve this ambition, actions will be required in all three areas:

Environment – By using Council leadership in changing the local environment through policy changes.

Policy approaches generally show great cost effectiveness for the prevention of obesity. These include setting the local culture by promoting behaviour and opportunity and limiting unhealthy choices. Such measures may include:

1. Reducing fast food shops, especially near schools
2. Making walking safer (e.g. through speed and parking restrictions near schools)
3. Encouraging businesses that sell and promote healthy food
4. Encouraging businesses that offer physical activity to children
5. Changing Unitary Development Plans to encourage walking and cycling and less reliance on cars.
6. Making breastfeeding in public socially acceptable.

Behaviour – By implementation of universal behaviour change to increase healthy eating and physical exertion in schools.

Changing behaviour has a strong evidence base and can be applied systematically at scale. There is an increasing body of evidence that behaviour change is easier at an early age. Food companies have applied this evidence for several generations, namely:

- Role modelling – usually a cartoon hero
- Reward – usually a toy or other collectable
- Repeatability – keep rewarding the behaviour change with rewards until internalised.

We need to commission interventions incorporating this behavioural science with evidence of impact on healthy food and activity choices. Such techniques have to be universally applied to lead to population change.

Opportunity – By increasing local opportunities for healthy eating and physical exertion by children.

There is a need to maximise opportunities for children to both choose healthier food and to be physically active (exertion). Some of these clearly link to the environmental changes. Some examples include:

- Having school meals that are appealing and healthy
- Ensuring school dining facilities are “exciting” with staff highlighting their appeal
- Ensuring access to low cost, high excitement activities
- Local “play” facilities that are safe

The achievement of the above will require considerable leadership and effort as well as the appropriate use of resources, including the Public Health allocation but also other local resources.

Schools are key to developing real change as many of the activities require their active participation.

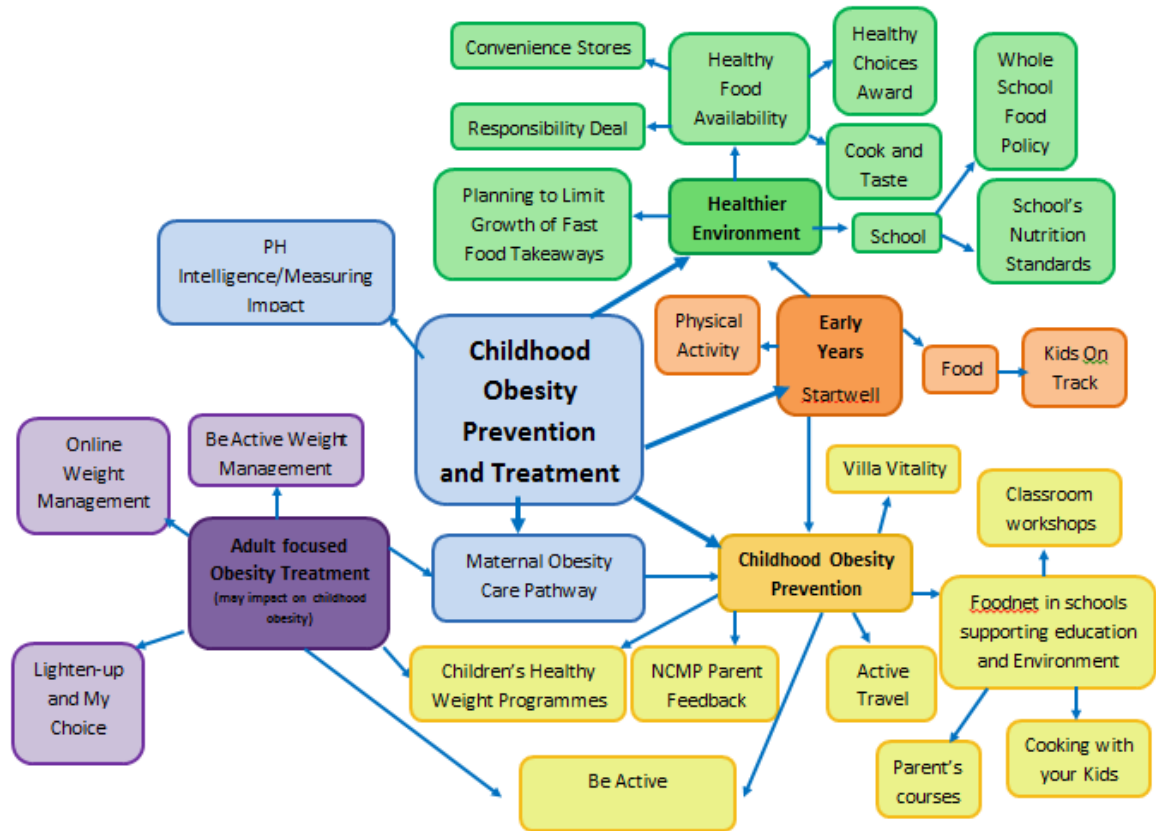
9.	What are we currently doing and is it working?
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Interventions to address childhood obesity in Birmingham fall within the following categories which are illustrated in more detail in figure 9:

- Changes to the environment to make it easier to make healthy choices – currently small scale coverage.
- Maternal obesity care pathway which has been running for 1 year and is now reaching 29% of obese pregnant women with 79% of completers gaining less than the maximum acceptable 9kg over the duration of their pregnancy.
- Under-fives obesity prevention – Startwell Partnership reaching 43% of early years settings with a focus on creating environments where healthy eating and increased activity are the norm.
- Childhood/school aged obesity prevention reaching 33 priority schools per year; focused on creating a healthy environment within the school as well as interventions targeting parents and children; plus Villa Vitality a partnership with Aston Villa reaching 3500 children per year.
- Children’s healthy weight programme (treatment of overweight and obesity) which supports 500 families per year equivalent to 0.6% of obese children with a mean weight reduction in line with that expected from research (0.1 reduction in BMI z-score in those completing the 7 week course and 0.2 reduction in BMI z-score in children followed up at 6 months).
- Be Active programme enables children and families to access a range of physical activity opportunities across the city. The programme will target 42,000 children and young people per month to be active engaging in activities such as swimming, children’s gym programmes and family based physical activity in Leisure Centres, Parks and community venues.
- Other services include the Fizzical Programme for sedentary children. The programme will target 5,000 young people to provide them with the opportunity to be physically active.

Overall, prevention initiatives reach 6.6% of children and treatment services have capacity to treat 0.6% of overweight or obese children. This level of focus is inadequate to prevent further increases in childhood obesity.

Figure 9. Currently commissioned programmes to tackle childhood obesity in Birmingham 2013



10.	Local views
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Local parents identify the barriers to healthier lifestyles if asked and their responses can be categorised as follows:

Lack of knowledge/skills: Chiefly about how to implement healthy eating guidelines. Health messages given by professionals appear to be taken seriously but are not always fully understood. Feedback from interactive nutrition education sessions shows that parents appreciate learning about how to read labels, hidden fats and sugars, appropriate portion sizes for children. Many parents are not confident in their ability to cook a healthy meal from scratch and perceive it to be time consuming as well as difficult.

Physical: proliferation of takeaways and competition between them bringing down prices. Type of food in local shops where families “top up” between supermarket trips.

Financial: Price, access to affordable food. Sometimes this is genuine (Wholemeal bread costs more than white bread). Perception that home cooking is more expensive than takeaways. Special offers on less healthy food are very tempting, especially for those with limited time as well as a low income.

Marketing, exposure, “Pester power”: advertising and promotions of less healthy foods, and particularly that on actual packaging, including “health claims”. Children asking for food and drink that they have seen advertised, or that their friends have. Easy access to calorie-dense foods in a vast range of settings such as supermarket or other shop check outs, leisure centres, hospitals, family entertainment venues including cinema, petrol stations.

Attitude /culture: family preferences and fear of this leading to waste and rejection, which causes trying healthy foods not previously or traditionally eating by their family to be a risk, and potentially a waste of money. Low demand for fruit and vegetables in some areas is cited as a reason for shops not stocking these products.

School staff have commented that families on low incomes ,but not low enough to be eligible for Free School Meals, send their children to school with packed lunches of poor nutritional quality. One Head Teacher mentioned that she was already concerned that the move to academy status, imminent for her school, meant that they would not be obliged to follow the National School Food Guidelines, and that pressure to cut costs might mean that a cheaper and poorer quality provider was chosen for their meals in future.

11.	Who are the key partners and what contribution can they have?
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Sector	contribution		
	Environment	Behaviour	Opportunity
Public Health			
Children, young people and families directorate			
Early years settings			
Schools			
Planning			
Transport and highways			
Regulation and licencing			
Parks			
Sport and leisure			
CCGs			
Primary care			
NHS Trusts			
Social care			
Business			
Voluntary sector			
Communities			
Districts			
Communications and media			

12.	Summary of Recommendations
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Reducing childhood obesity will require actions in three areas:

Environment – By using Council leadership in changing the local environment through policy changes.

Behaviour – By implementation of universal behaviour change to increase healthy eating and physical exertion in schools.

Opportunity – By increasing local opportunities for healthy eating and physical exertion by children.

The achievement of the above will require considerable leadership and effort as well as the appropriate use of resources. However, reversal will not happen overnight, indeed it will probably take some time to be seen, probably over at least 5 years. Any intervention has to be universal as the problem is across the city

13.	References
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