Maternal nutrition and weight management in pregnancy: A nudge in the right direction

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Abstract
Suboptimal maternal nutrition and excessive gestational weight gain (GWG) establish in mothers and their offspring a weight gain trajectory towards overweight and obesity. Therefore, pregnancy may be the best opportunity to disrupt the generational cycle of obesity. More than half of women in the UK now enter pregnancy overweight or obese, highlighting that if interventions are not targeted towards women in higher weight categories before conception they are likely to ‘miss the mark’. To address issues of suboptimal maternal nutrition and excessive GWG in antenatal care, health professionals need to consider how women’s requirements and expectations may have changed in recent years and the impact of weight stigma on the care of women who are obese. This paper aims to drive changes in clinical practice guidelines, medical curricula, the language used by health professionals, and ultimately promote maternal nutrition and weight management in pregnancy as key priorities during antenatal care. Evidence indicates that women want non-judgemental, simple and encouraging guidance in these areas. Small changes to health professionals’ practice can improve how advice regarding nutrition and weight management in pregnancy is delivered, and has the potential to reduce overweight and obesity prevalence in women and their children in the years to come. Surely that goal is worth pursuing.

Keywords: bodyweight, nutrition, obesity, pregnancy

Introduction
Obesity is firmly established as one of the most significant public health challenges faced by society (Afshin et al. 2017; Bray et al. 2017), requiring collaborative and multisectorial action. In 2015, 4 million deaths and 120 million disability-adjusted life years (DALYs) globally have been attributed to obesity (Afshin et al. 2017), and there are now more people in the world who are obese than underweight (Di Cesare et al. 2016). An upward trajectory of obesity prevalence is expected and by 2025, one-fifth of the world’s population is expected to be obese (Di Cesare et al. 2016). This unprecedented health crisis is a result of complex interactions between genetics, the environment and modifiable lifestyle factors (Swinburn & Egger 2002; Bray et al. 2017). Taking immediate action to reverse the incidence of obesity has the potential to save lives (Bray et al. 2017). Improving nutrition and encouraging appropriate weight gain in pregnancy presents an opportunity to disrupt the generational cycle of obesity (Melzer & Schutz 2010; Josefson 2011), as well reducing the likelihood of maternal and offspring health issues during antenatal and post-natal care, and beyond.
Risks associated with high maternal BMI and excessive gestational weight gain

Suboptimal maternal nutrition and excessive gestational weight gain (GWG) are strongly associated with higher infant birthweights (Siega-Riz et al. 2009; Goldstein et al. 2017), impact on infant body composition (Blumfield et al. 2012; Blumfield 2015), and establish in the offspring a weight gain trajectory towards overweight and obesity (Oken et al. 2007; Melzer & Schultz 2010). Fetal abnormalities, such as neural tube defects (NTDs) and congenital heart disease, are more common amongst offspring of women with obesity, yet the limited diagnostic ability of screening tools makes these conditions difficult to identify during screening of obese women (Krishnamoorthy et al. 2006; Gilmandyar et al. 2012). Research into the effects of maternal obesity on fetal programming (Carolan-Olah et al. 2015; Langley-Evans 2015) shows some support for the hypothesis that excessive maternal energy intake leads to alterations in energy homeostasis, appetite dysregulation and obesity in offspring (Dabelea & Crume 2011). Once epigenetic alterations are established, they are permanent and transmitted from one generation to the next even when the nutritional insult has ceased (Carolan-Olah et al. 2015; Langley-Evans 2015). Risks associated with maternal preconception overweight and obesity, independent of GWG, include macrosomia, maternal gestational diabetes mellitus (GDM), neonatal adiposity, offspring metabolic dysfunction (Catalano & De Mouzon 2015) and childhood obesity (Josefson 2011).

High maternal bodyweight and excessive GWG can create challenges for health professionals throughout the antenatal and post-natal period (Krishnamoorthy et al. 2006; Heslehurst et al. 2007). Excessive GWG contributes to the risk of pregnancy-induced hypertension (Fortner et al. 2009), macrosomia, caesarean section and birth trauma (Siega-Riz et al. 2009; Goldstein et al. 2017), is the primary risk factor for post-partum weight retention (Melzer & Schultz 2010; Catalano & De Mouzon 2015), and exacerbates pregnancy complications associated with weight-related conditions such as type 2 diabetes (Parellada et al. 2014). Higher preconception bodyweight and excessive GWG can both cause problems with clinical abdominal palpation, inaccurate symphysio-fundal height assessment and ultrasound examination (Gilmandyar et al. 2012). Fetal monitoring in labour, insertion of spinal anaesthesia and mobilising labouring women in special hoists can become more difficult, which can be even more challenging in a situation where fetal distress is suspected and emergency birth is required (Krishnamoorthy et al. 2006; Vic Gov DHHS 2017). Obese women often develop comorbidities such as pressure sores and deep vein thromboses (Heslehurst et al. 2007) and are at increased risk of caesarean section, anaesthetic and post-operative complications (Gilmandyar et al. 2012). Overall, consultant-led care, precautionary assessments and additional appointments associated with maternal obesity place an increased burden on the healthcare system (Heslehurst et al. 2007), not to mention the worry and discomfort experienced by women.

Overweight and obesity can often mask micronutrient deficiencies occurring as result of an energy-dense diet of poor nutritional quality (Markovic & Natoli 2009; Via 2012). It is well-established that folate deficiency increases the risk of NTDs in offspring (Zaganjor et al. 2016) and maternal iodine deficiency can impact on offspring neurologic and cognitive function (Zimmermann 2009). However, less is known about the effects of other specific nutritional deficiencies and inadequacies during pregnancy. Women who are overweight or obese at conception have an increased risk of deficiencies in iron, vitamin B12, vitamin D (Sánchez et al. 2016), vitamin B6, vitamin C and vitamin E (Sen et al. 2014). Thus, ensuring a high-quality diet that promotes optimal GWG is crucial before and during pregnancy.

Meet our market

High rates of overweight and obesity

Globally, the greatest increase in adult obesity rates in the past 30 years has occurred in early adulthood (Afshin et al. 2017). In the UK, 49% of women aged 25–34 years and 59% of women aged 34–44 years are overweight or obese (NHS 2016) with more than half of women now entering pregnancy overweight or obese (Heslehurst et al. 2010). This highlights that interventions to target nutrition and weight gain in pregnancy need to be tailored to women in higher weight categories, otherwise they are likely to ‘miss the mark’ for the majority of the pregnant population.

Perceptions of bodyweight in pregnancy

Changes in social ‘norms’ have altered perceptions of what constitutes a ‘healthy’ weight (Johnson et al. 2008). With higher levels of adiposity now viewed as the norm, health professionals may be less able
to visually identify excess weight in patients, and pregnant women may be surprised and upset when labelled ‘high risk’ after being weighed (Furber & McGowan 2011; Atkinson et al. 2013). A cross-sectional study of 338 pregnant women from the US found that 48% underestimated their weight and only one-third were able to identify how much weight they should gain during pregnancy (Shulman & Kottke 2016). Similar results have been reported elsewhere (McPhie et al. 2015; Bookari et al. 2016). Women who are overweight or obese are most likely to be unaware of recommendations around weight gain during pregnancy (McPhie et al. 2015; Bookari et al. 2016). This is not surprising considering that many health professionals are also unaware of how much weight women should gain during pregnancy (Biro et al. 2013) and advice about GWG is not provided to women universally (Stewart et al. 2012).

Weight stigma

Women who are overweight or obese may have struggled with weight management their entire lives (Campbell et al. 2011; Sand et al. 2015) and be serial dieters who continually seek solutions to their weight issues. Pregnancy may be the first time they feel their weight is socially acceptable (Campbell et al. 2011; Furber & McGowan 2011) and that they can take a break from the cycle of dieting (Vanstone et al. 2016). Feelings of self-acceptance may be short-lived when, on a day-to-day basis, people do not notice or acknowledge the pregnancy in the same way as they would for women of lower BMIs or when asked if they are ‘having twins’ (Furber & McGowan 2011). In a healthcare setting, women may experience negative feelings about body image when allocated to a ‘high-risk’ clinic for their pregnancy management due to their BMI (Furber & McGowan 2011) or referred to exercise classes to help manage their weight. These issues can mean that pregnancy is a negative experience for some women (Furber & McGowan 2011; Furness et al. 2011). Weight stigma can leave women feeling disempowered (Phelan et al. 2015), is the primary reason for women not taking up weight management support (Atkinson et al. 2013), and its impact is often underestimated by health professionals (Furness et al. 2011). Stigmatisation has no place in modern healthcare practice and education for its prevention needs to be embedded into curricula for all health professionals (Scamell & Olander 2016).

Age

Women are postponing pregnancy until later in life, with one in five babies born to mothers aged >35 years in 40% of European countries (EPHR 2013). In the UK, the number of women having babies at >40 years trebled between 1989 and 2009 (Sutcliffe et al. 2012). Women of advanced maternal age are more likely to have a higher BMI at the start of pregnancy (Afshin et al. 2017; Fitzpatrick et al. 2017), associated comorbidities and multiple births (Fitzpatrick et al. 2017). This has implications for practice as women with multiple births are more likely to experience excessive GWG (Melzer & Schultz 2010), and rates of GDM are five times higher (Fitzpatrick et al. 2017).

Conflicting advice

During pregnancy, women may be told by family ‘You must gain weight’ (Vanstone et al. 2016; Fieril et al. 2017), whilst health professionals may say ‘You must not gain too much weight’ (Siega-Riz et al. 2009), ‘You probably shouldn’t gain any weight’ or ‘You should lose weight’ (Biro et al. 2013). In terms of diet and nutrition, women can often feel overwhelmed by the advice they receive from multiple sources (e.g. family, the Internet, health professionals) and may find it impossible to live up to the expectations of others (Wennberg et al. 2013). Conflicting advice is a known barrier to following dietary advice and achieving optimal weight management in pregnancy (Campbell et al. 2011), and it can be a cause of considerable confusion, guilt and feelings of vulnerability (Wennberg et al. 2013).

Uninvited advice

Throughout the literature, pregnancy has been described as ‘a teachable moment’ (Phelan 2010;Josefson 2011) when women have regular contact with health professionals over a relatively long period of time (Josefson 2011; Swift et al. 2016). While this may be the case, it implies that women are open to all advice. A systematic review (Campbell et al. 2011) of qualitative and quantitative studies confirmed that pregnancy is a time when women are motivated to make behaviour changes that will protect the health of their child, but they may be less receptive to advice about weight management specifically. Put simply, weight management may not be a priority during pregnancy for some women (Atkinson et al. 2013).
Uninvited comments about weight may even trigger eating in women who have found weight management a challenge in the past (Nyman et al. 2010). When this occurs, pregnancy could be described as a ‘missed opportunity’ to provide women with the support they actually want (Atkinson et al. 2013).

**So what is the solution?**

**Address gaps in current guidelines**

Studies investigating the impact of GWG on maternal and offspring outcomes tend to refer to the US Institute of Medicine (IOM) recommendations for GWG (IOM 2009; Siega-Riz et al. 2009; Goldstein et al. 2017; Moll et al. 2017) (see Table 1). The evidence-based IOM recommendations were developed to minimise negative outcomes associated with inadequate or excessive GWG (Rasmussen et al. 2009); however, they have not been adopted universally. Current National Institute for Health and Care Excellence (NICE) antenatal care guidelines for the UK (NICE 2010) make no reference to weight gain targets.

Controversy surrounds the IOM recommendations, particularly for women who are obese (Josefson 2011). It is suggested that the recommended GWG range (5–9 kg) is too high for women with a BMI >30 kg/m², and there are no specific recommendations for women with higher classes of obesity (Josefson 2011; ACOG 2013). A longitudinal study in the US (n = 4496) found gaining <5 kg during pregnancy to be associated with the lowest risk of caesarean section and post-partum weight retention for women who were obese (Zilko et al. 2010). A prospective cohort study, conducted in the US (n = 1212), found that for women who were obese weight loss of 7.6 kg had the lowest predicted prevalence of pre-term birth, small for gestational age (SGA), large for gestational age (LGA) and post-partum weight retention (Oken et al. 2009). Despite these findings from individual studies, a subsequent systematic review comparing the effects of gestational weight loss (GWL) with GWG in women who were obese (Kapadia et al. 2015) concluded GWL is not recommended as there was a higher odds of SGA infants (adjusted odds ratio 1.76; 95% CI: 1.45–2.14). As a significant number of women nowadays enter pregnancy in higher age brackets and with comorbidities (Fitzpatrick et al. 2017), clearer recommendations for women with other conditions, such as type 2 diabetes (Parellada et al. 2014), are also required. While the IOM recommendations may be controversial, especially for women who are with very high BMIs, a recent systematic review and meta-analysis of over one million women showed that gaining above or below the IOM ideal weight gain parameters was associated with adverse maternal and fetal outcomes (Goldstein et al. 2017). Although more research in this area is required, the IOM recommendations appear to be the best guide for appropriate GWG currently available (ACOG 2013).

National antenatal clinical practice guidelines (CPGs) (NICE 2014; RCOG 2014; RANZCOG 2015) acknowledge some of the additional nutrient requirements of women who are obese. In the UK, health professionals are advised to be particularly vigilant to ensure pregnant women with high BMIs take a daily vitamin D supplement at a dose of 10 µg (RCOG 2014). Additional folate supplementation is recommended for pregnant women with a BMI >30 kg/m² in many national CGPs (a daily dose of 5 mg instead of the 400–500 µg dose recommended for women with lower BMIs) (NICE 2014; RCOG 2014; RANZCOG 2015). When considering the multiple nutritional deficiencies that occur in the ‘malnutrition of obesity’ (Kaidar-Person et al. 2008a,b), the current approach to specific nutrition supplementation for women who are obese as well as women who are overweight but not obese may not be sufficient.

While CPGs are integral to the delivery of evidence-based care, their impact is limited by how they are interpreted and implemented by health professionals (Vernooij et al. 2016). New or revised antenatal care guidelines regarding weight management in pregnancy should be supported with clear dissemination plans,

**Table 1** Institute of Medicine (IOM) recommendations for gestational weight gain in pregnancy (IOM 2009)

<table>
<thead>
<tr>
<th>Pre-pregnancy (BMI)</th>
<th>Recommended weight gain (kg)</th>
<th>Rate of weight gain (kg/week) in second and third trimesters*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight (BMI &lt;18.5 kg/m²)</td>
<td>12.5–18.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Healthy weight (BMI 18.5–24.9 kg/m²)</td>
<td>11.5–16.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Overweight (BMI 25–29.9 kg/m²)</td>
<td>7.0–11.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Obese† (BMI &gt;30 kg/m²)</td>
<td>5.0–9.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

BMI, body mass index. Twins: Women of a healthy weight should gain 16.8–24.5 kg, overweight 14.1–22.7 kg and obese 11.3–19.1 kg. There are no recommendations for multiple pregnancies.

*Assuming 1–2 kg weight gain in the first trimester.
†The IOM gestational weight gain guidelines do not make any specific recommendations for women with Class II or Class III obesity.
guideline implementation tools and health professional training (NICE 2012).

Train health professionals about nutrition and weight issues in pregnancy

The need for further health professional training regarding the delivery of information about nutrition and weight management in pregnancy has been highlighted by many (Campbell et al. 2011; Macleod et al. 2013; Heslehurst et al. 2014; Walker et al. 2017). For the majority of health professionals, their training had little time to cover nutrition in already crowded curricula (Adams et al. 2015) and, consequently, many are unprepared to answer nutrition/diet questions with authority. Research and practice in relation to maternal overweight and obesity and suboptimal nutrition are advancing at a pace and health professionals can find it difficult to keep up (Josefsen 2011; Schmied et al. 2011). Health professionals operate within the tension of fulfilling their duty of care to minimise pregnancy risk (Stewart et al. 2012) without offending their patients during a time of life when lifestyle, weight and body image are sensitive topics (Phelan 2010). It is little wonder that health professionals report low levels of confidence in this area.

Preconception care that emphasises the importance of attaining a healthy weight prior to conception and provides advice on how to achieve this (Farahi & Zolotor 2013; Catalano & De Mouzon 2015), alongside discussions about contraception and fertility awareness (NICE 2010; Farahi & Zolotor 2013; Hampton et al. 2016), is likely to be of benefit. Supporting young women to maintain a healthy weight early in adulthood, regardless of pregnancy plans, is an effective preventive strategy for the development of obesity later in life, and particularly important when considering only approximately half of pregnancies in the UK are planned (Wellings et al. 2013).

There has been a plethora of randomised controlled trials (RCTs) testing the efficacy of various interventions assisting women to adopt behaviours that support weight management during pregnancy, and health professionals might benefit from wider dissemination of these findings. Systematic reviews show that dietary interventions can have a positive effect in women of a healthy pre-pregnancy weight (Tanentsapf et al. 2011; Thangaratinam et al. 2012), but may be less effective in women who are already overweight or obese (Dodd et al. 2010; Muktabhant et al. 2012). Although the effects of dietary interventions to support weight management through pregnancy tend to be dependent on maternal bodyweight, overall the intervention techniques that appeared to be most effective in these systematic reviews included: individual counselling sessions with dietitians (Asbee et al. 2009; Quinlivan et al. 2011; Huang et al. 2011), GWG monitoring throughout pregnancy (Asbee et al. 2009; Quinlivan et al. 2011) and ongoing support with continuity of care (Polley et al. 2002; Quinlivan et al. 2011).

A recent qualitative study found that a midwife-led lifestyle intervention (Haby et al. 2015; Fieril et al. 2017) that initiated small lifestyle changes, such as having breakfast, avoiding food late at night and planning meals, led to successful reductions in GWG for women who were obese (Fieril et al. 2017). Generic nutrition advice such as ‘decrease portion size’ tends to be less effective than advice tailored to the dietary habits of the individual. Health professionals need to offer strategies that assist women to incorporate nutrition advice into their lifestyles. For example, explaining how the dissatisfaction that may come with smaller portions can be countered with enhancing the variety and flavour of meals and by mindful eating (Rogers et al. 2016).

Many women are willing to be weighed throughout pregnancy (Swift et al. 2016; Vanstone et al. 2016) and can be confused or disappointed when it does not occur (Atkinson et al. 2013; Swift et al. 2016). A review of the literature (Hyttén 1990) questioned whether weighing women at every antenatal visit increases quality of care, and concluded that weighing is appropriate when it is likely to lead to some sort of action by the health professional. A retrospective study (n = 1092 women) conducted in 1991 found minimal benefits of recording weight in antenatal care records (in terms of improving the quality of antenatal care) and suggested routine weighing should cease as it can increase patient anxiety (Dawes & Grudzinskas 1991). Current CPGs regarding GWG continue to hold tight to the findings of studies such as these (Hyttén 1990; Dawes & Grudzinskas 1991), recommending that weighing throughout pregnancy should be confined to circumstances that affect clinical management (NICE 2010; Aust. DOH 2012). More than 25 years on, there is strong evidence that routine weighing alone does not reduce excessive GWG (Jeffries et al. 2009; Brownfoot et al. 2016). However, regular weighing in pregnancy, with the provision of positive and supportive advice, can be effective in assisting women to manage their weight (Fieril et al. 2017). The statement by Dawes and Grudzinskas (1991), ‘weighing… requires as much explanation as
any other screening procedure’, remains true today. It should be acknowledged that some women prefer to leave weight management off the agenda until after the baby is born (Atkinson et al. 2013) and seeking permission to initiate conversations about weight is recommended in both non-pregnant and pregnant populations (Canadian Obesity Network 2017; Sturgiss & van Weel 2017).

Focus on communication

Many people nowadays are used to immediate access to online diet advice, not always from reputable sources, but perhaps lack the skills to be discerning about information quality. This challenges health professionals and nutrition scientists, as both groups struggle to have their voices heard above the marketing and slick messaging of modern day media (Rowe & Alexander 2010; Ladher 2016). Health professionals tend not to bring up nutrition and weight with their pregnant patients because they recognise these as sensitive topics (Furness et al. 2011; Schmied et al. 2011) and are concerned about women feeling criticised (Olander et al. 2011). While health professionals are highly skilled in patient-centred care, training and professional development to help them engage in difficult discussions around weight and nutrition during pregnancy are necessary (Zhu et al. 2011; Walker et al. 2017).

Pregnancy requires continuity of care, with repeated visits to the healthcare provider, allowing the building of trust and providing an opportunity to address bodyweight and nutrition issues that may have a long-term impact on both the mother’s and baby’s health. Women want consistent and realistic guidance regarding nutrition and weight in pregnancy that is simple to understand, practical and easy to follow (Atkinson et al. 2013; Fieril et al. 2017) and trust health professionals to provide this throughout pregnancy (Swift et al. 2016). Vanstone et al. (2016) systematically synthesised contemporary women’s views and perceptions of GWG and reported that women want ‘clear, timely, credible and evidence-based information’ regarding weight, nutrition, physical activity and lifestyle to be delivered proactively by health professionals during pregnancy.

In terms of communication of advice about nutrition and weight in pregnancy, one size does not fit all. Contemporary women are open to advice (Swift et al. 2016; Walker et al. 2017); however, they will inevitably close off when the advice does not meet their needs or expectations (Atkinson et al. 2013). Women consider relational aspects of care such as the interpersonal relationships with staff, continuity of care, and availability of health professionals to be highly important, perhaps even more so than hospital facilities and structured systems of care (Jenkins et al. 2014). Health professionals in antenatal care are also highly aware of the importance of the psychosocial components of care (Haertsch et al. 1996). The ‘disconnection’ found frequently between women (who generally want advice regarding weight and nutrition during pregnancy) and health professionals (who want to give that advice that is acceptable and supportive to women) (Swift et al. 2016; Vanstone et al. 2016) is an area to be addressed through better communication. Simply ‘walking in someone else’s shoes’ can assist those in a position of advantage (i.e. health professionals) to empathise and connect with others (i.e. their patients) and reflect on their own actions (Batson et al. 2003). This form of perspective taking has been suggested as a strategy to address the weight stigma reported in healthcare settings (Phelan et al. 2015) and throughout pregnancy by women who are obese (Furber & McGowan 2011; Furness et al. 2011; Schmied et al. 2011).

How dietary information is delivered is important, particularly considering the high levels of anxiety or depression reported in women who are overweight or obese (Luppino et al. 2010; Furber & McGowan 2011). Advice should be positive, affirming (Swift et al. 2016) and patient-centred (Nyman et al. 2010; Canadian Obesity Network 2017). An RCT (Bogaerts et al. 2013) (n = 205) in Belgium reported that incorporating aspects of motivational interviewing (exploring why making changes may be difficult) into nutrition advice was not only effective in decreasing GWG, but also decreased levels of anxiety in pregnant women. It is obvious that health professionals need more training and consultation time to do this well (Nyman et al. 2010; Furness et al. 2011) and it is of concern that individuals with obesity can sometimes receive less time with health professionals at medical consultations than those with healthier bodyweights (Phelan et al. 2015). Action needs to be taken at organisational and government levels to enable longer consultations. In addition, it is the responsibility of health professionals to refer high-risk women to other health professionals within their team who specialise in areas such as nutrition, physical activity and psychological health.

The ‘5As’ framework can be a useful tool for health professionals when addressing weight management with their patients (Fitzpatrick et al. 2016); however,
it may have limited use in the UK where there are no official guidelines for weight gain in pregnancy, although the IOM recommendations are used by some. While it is yet to be formally evaluated in pregnant populations, the Canadian Obesity Network describes how it may be applied to help prevent excessive GWG (Canadian Obesity Network 2017). In the context of pregnancy, the ‘5As’ framework recommends that health professionals:

1. Ask permission to discuss weight and GWG with patients;
2. Assess patient’s weight using BMI and calculate recommended GWG;
3. Advise patients regarding their GWG, the benefits of gaining weight within these parameters, and strategies that may assist them to achieve a healthy weight;
4. Agree on a weight management plan that involves members of a multidisciplinary team when necessary; and
5. Assist the patient to manage GWG throughout the pregnancy and assess whether their weight management plan should be revised.

It has been highlighted that the ‘5A’s’ is not linear, and should be implemented with an expectation that steps may be revised or repeated throughout pregnancy (Sturgiss & van Weel 2017). Health professionals must be careful with the language they use within this framework. Women who are obese can recoil from being set apart as ‘high risk’ during pregnancy (Furber & McGowan 2011). Perhaps the solution is for health professionals to consider all pregnancies as high risk – as they may well be in modern society’s ‘obesogenic’ environment that fosters weight gain (Swinburn & Egger 2002) and where approximately half the women of childbearing age are overweight or obese.

Summary

The majority of women want or require advice regarding nutrition and GWG in pregnancy. Current endeavours of health professionals to provide support in these areas appear to be inadequate to meet the needs of many women today, particularly those who are overweight and obese. Problems in the area are likely to be underpinned by the lack of guidance and training for health professionals regarding GWG, nutrition, and how to deliver advice to pregnant women. At an organisational and government level, measures should be taken to increase consultation times to allow women to receive the advice they require and access to referrals to allied health that are timely and affordable.

Health professionals need to learn to sell their messages better and have their voices heard over the cacophony of information from social media and the Internet. They also need to consider the diverse needs of women today, particularly those of women who are overweight or obese, and those who experience the highest levels of disadvantage. Advice needs to be tailored, clear, empathetic and realistic. Women trust their doctors and other health professionals and are highly motivated by the health of their unborn baby. Therefore, there is potential to better support pregnant women to improve health outcomes for both them and their children, and ultimately the health of future generations. Taking action has the potential to radically shift obesity prevalence in the years to come. Surely that is a goal worth pursuing.

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Conflict of interest

The authors report no conflict of interest.

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