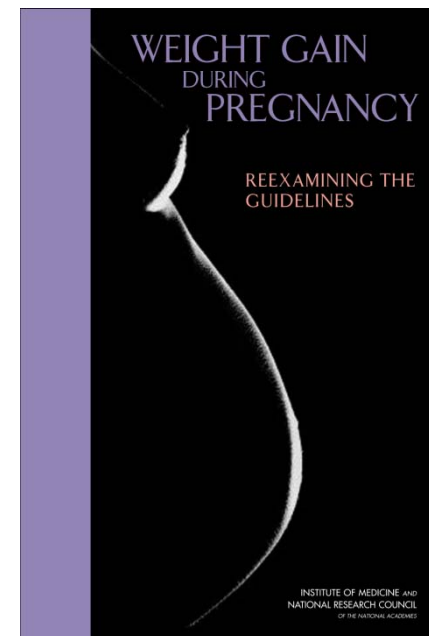
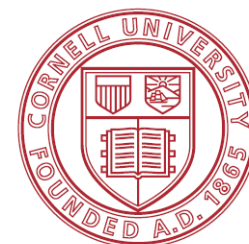


The road from the 1990 to the 2009 guidelines for weight gain during pregnancy



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Pregorexia

preoccupation with weight control through extreme dieting and exercising while pregnant

Eating for 2 (or more)

consumption of more during pregnancy than is needed

NICE Guidelines

weigh only those women “in whom nutrition is a concern”



NEW YORK

Many of the city's mothers-to-be are counting every carb and pushing their heart-rate monitors to the limit to stay skinny and sexy while pregnant. Is this harmless vanity? Or a New York obsession gone too far?

The Perfect Little Bump

BY LAURIE ABRAHAM

FOURTEEN WEEKS pregnant with her first child, Margot Tenenbaum secretly wished she were a bit more nauseous. As it was, she controlled her mild bouts of queasiness with pasta and pizza, but if she'd been just a notch sicker every once in a while, she might have felt too bad to eat at all. Who knows? Maybe she would have even thrown up.

The thought occurred to her, she sheepishly concedes, at a celebratory brunch in Brooklyn with her husband and another couple who are expecting a child. The other mother-to-be, already a stick before she was pregnant, was telling the group how miserable her morning sickness had been and how she'd lost eight pounds so far in her first trimester.

"And I was saying," Tenenbaum recalls,

PHOTOGRAPHS BY KATHERINE WOLKOFF
New York, 9/27/04

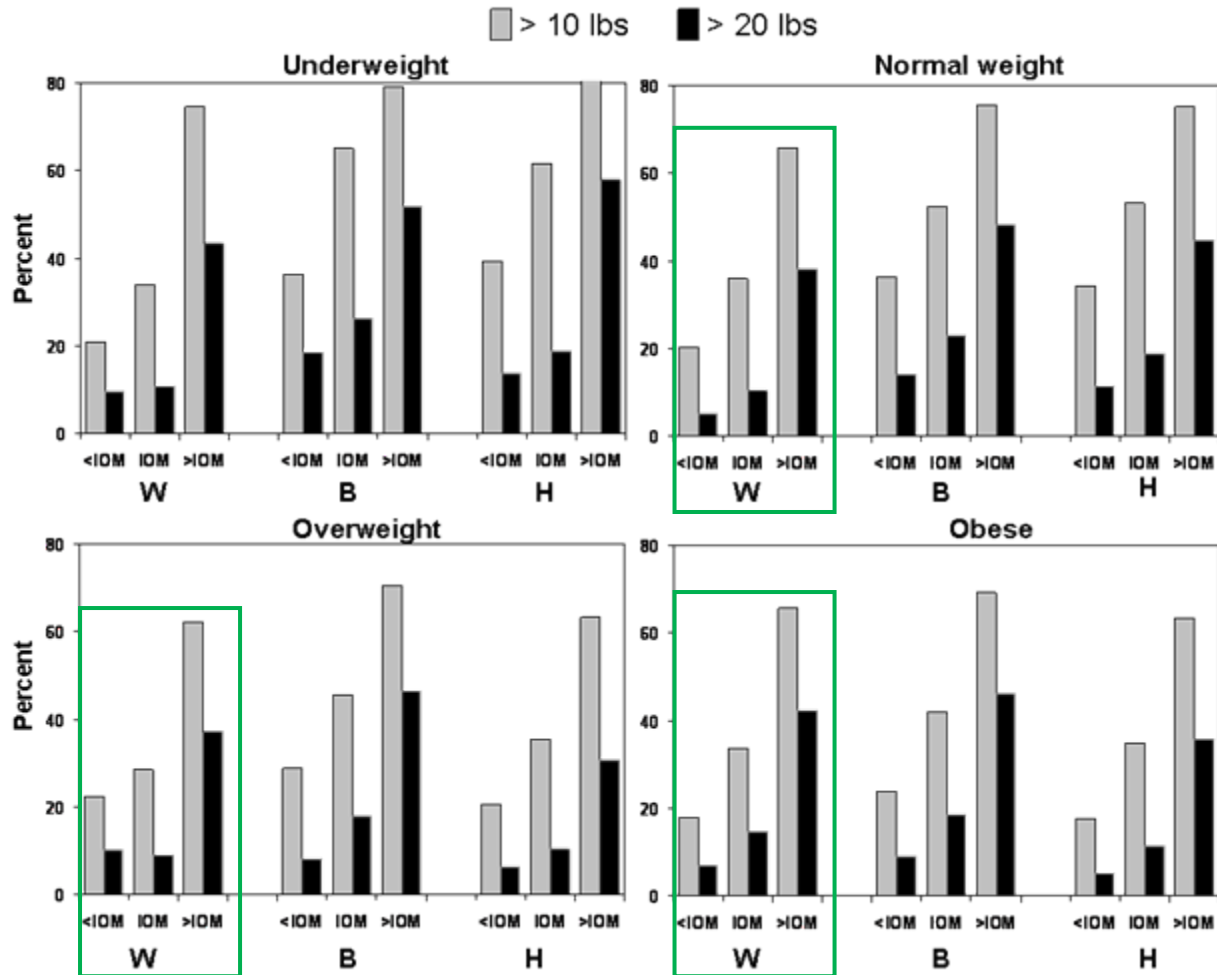
The conditions for new guidelines

- New guidelines are expensive, so something has to have changed to justify the expense
 - Different conditions of the population
 - New data
 - New concepts or opportunities for analysis
- Political will and donors are also needed
 - 2006 workshop created these conditions

Conditions of the population

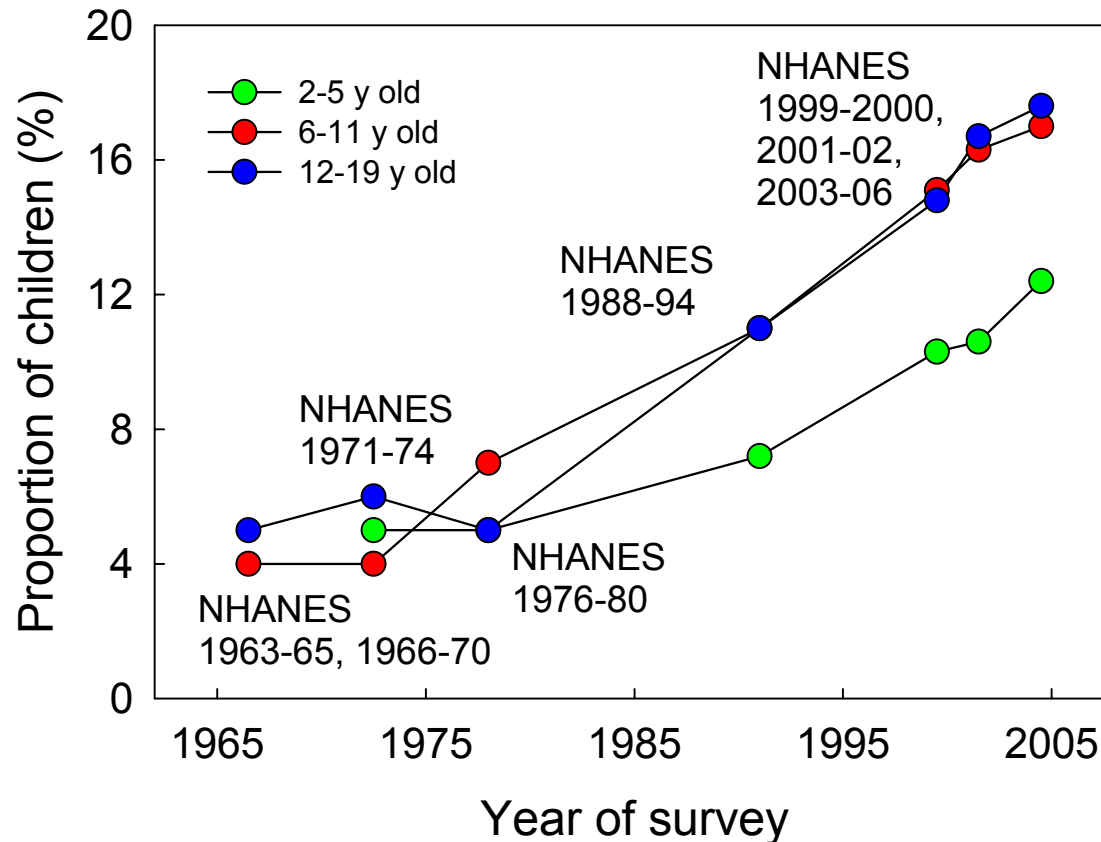
- Continued high rates of preterm birth and infant mortality
- Increases in:
 - Prepregnancy BMI
 - Cesarean delivery
 - Postpartum weight retention
 - Childhood obesity

Association between gestational weight gain relative to the 1990 IOM guidelines and PPWR at > 24 wk by racial/ethnic group: US, PNSS 2004-06, n ~ 40,000



From: *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington, DC: National Academy Press, 2009 (A. Sharma, CDC, pers. comm., 2008).

Prevalence of overweight ($\geq 95^{\text{th}}$ percentile)
among children and adolescents
US, 1963-2006

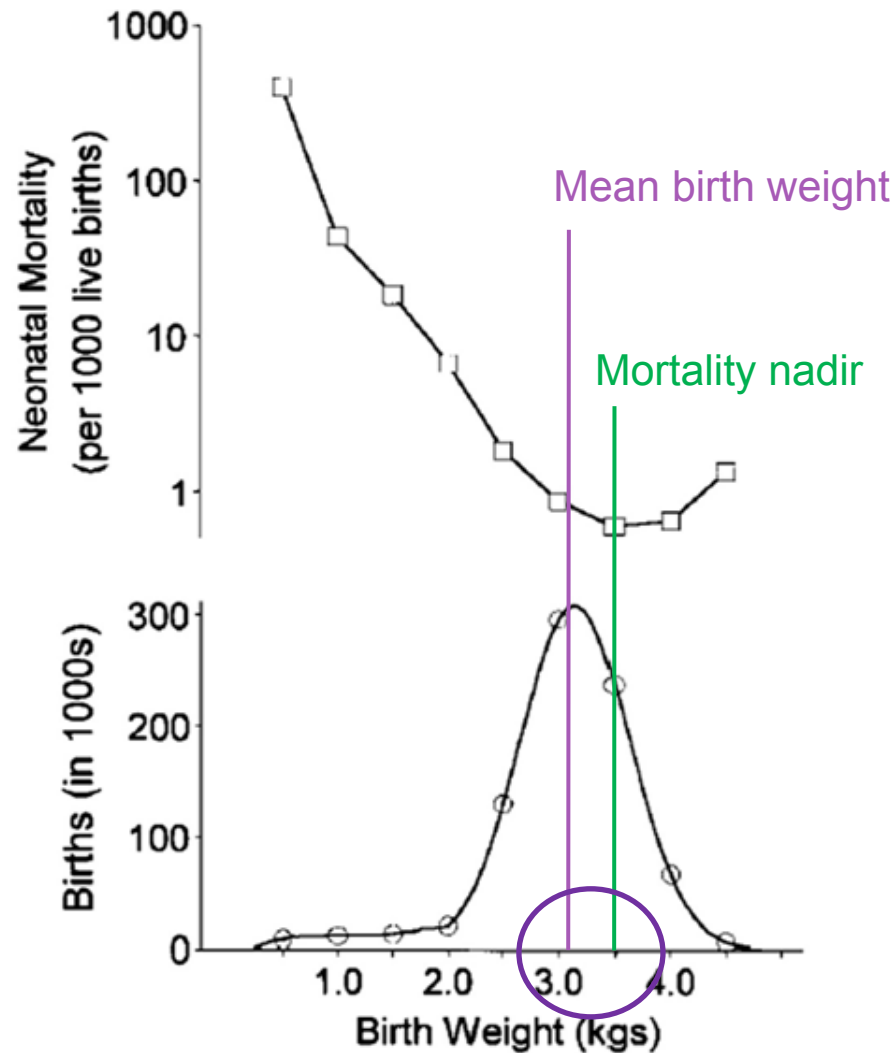


From: NCHS - Health E Stats at <http://www.cdc.gov/nchs>;
Ogden CL, *et al.* *JAMA* 2006;**295**:1549; and Ogden CL,
et al. *JAMA* 2008;**299**:2401.

1990 scientific approach

- Calculated the GWG needed to achieve the birth weight associated with minimal fetal/neonatal mortality
 - This generally occurs at birth weights 200 g above the mean birth weight of the population
- *Inference:* to have babies of this weight, women will have to increase their GWG
- Inadequate data for obese women

Weight-specific neonatal mortality and the distribution of weights for live births: USA, 1998



From: Wilcox AJ. *Int J Epidemiol* 2001;**30**:1233.

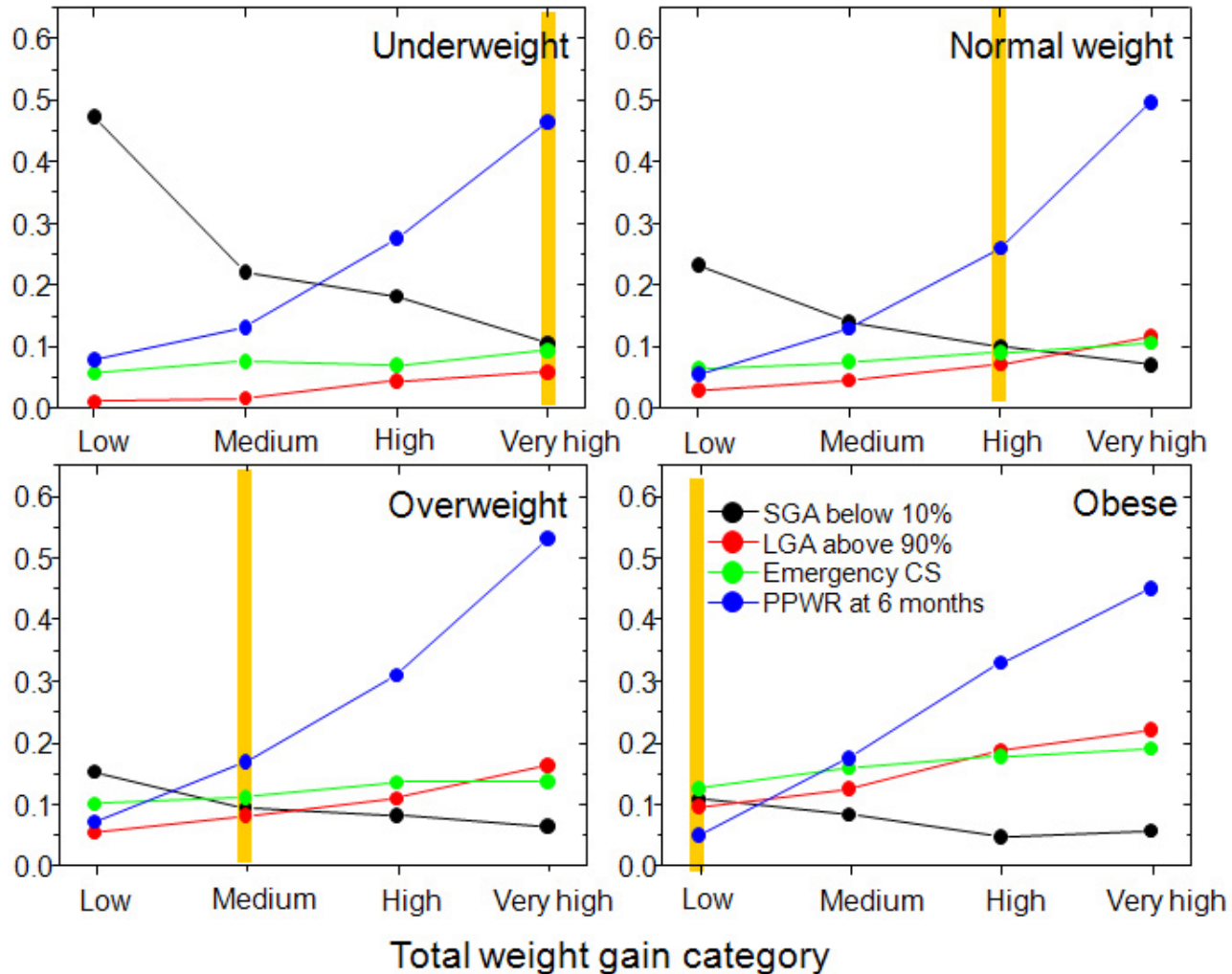
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2009 scientific approach

- Calculated the GWG needed to achieve both acceptably low proportions of SGA births and preterm birth as well as minimal risks of adverse maternal and child outcomes
 - Cesarean delivery, postpartum weight retention; childhood obesity
- Verified the results with a quantitative risk analysis

Association among prepregnancy BMI, GWG and maternal and neonatal outcomes: DNBC, $n = 60,892$

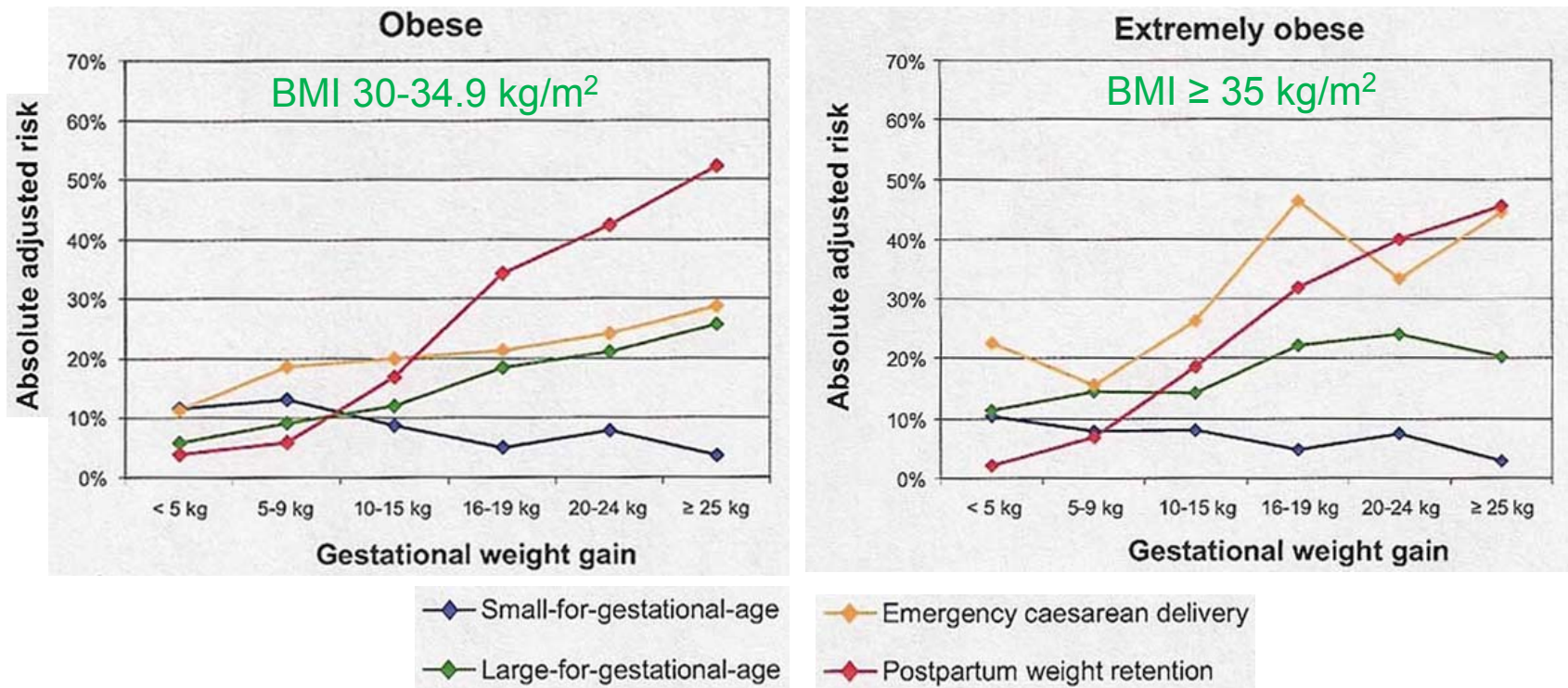


From: Nohr EA, et al. *Am J Clin Nutr* 2008;**87**:1750.

2009 scientific approach

- GWG guidelines should be a range
- The range decreases with increasing prepregnancy BMI
 - It's probably lower for higher classes of obesity
 - Data are not available yet
- The tradeoff favors lower GWG ranges if the risk of childhood obesity is included
 - Data are not available yet

Risk of SGA, LGA, emergency cesarean delivery and postpartum weight retention for obese and extremely obese women by GWG: DNBC



From: *Weight Gain During Pregnancy: Reexamining the Guidelines*. Washington, DC: National Academy Press, 2009 (EA Nohr, Appendix G).

1990 recommendations

- Women should gain within the guidelines for their prepregnancy BMI, using a goal set jointly with their healthcare provider
- Their healthcare provider should monitor women's GWG and, if necessary, jointly develop and implement corrective action

2009 recommendations

- Women of childbearing age should receive preconceptional care and be informed about these guidelines by the government, private voluntary organizations and their healthcare providers
- Women should conceive at a healthy weight

2009 recommendations

- Women should gain within the guidelines for their prepregnancy BMI, using a goal set jointly with their healthcare provider
- To assist women in gaining within the guidelines, providers of prenatal care should offer pregnant women counseling (guidance on dietary intake and physical activity) that is tailored to their life circumstances

The challenges

- ~55% of American women of childbearing age are not at a healthy weight
- We know little about what kinds of interventions will help non-pregnant women to reach a healthy weight or to gain within the guidelines!
 - Individualized care is necessary but not sufficient
 - Consistently improved outcomes have not been demonstrated

The challenges

- Following these recommendations would require a radical change in the medical care of American women
 - Preconceptional care is the exception and is not offered to such a high proportion of the population
 - Individualized care with counseling during pregnancy is also the exception as most obstetric practices are not prepared to offer this service