

<b>Indicator:</b>	<b>Fruit and Vegetable Consumption (F1a)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Fruit and Vegetable Consumption
Demographic group:	Women aged 18–49 years.
Data resource:	LACH Survey <a href="http://publichealth.lacounty.gov/ha/hasurveyintro.htm">http://publichealth.lacounty.gov/ha/hasurveyintro.htm</a>
Data availability:	2005, 2007
Numerator:	Women aged 18–49 years from Los Angeles County who reported eating fruits and vegetables $\geq 5$ times per day.
Denominator:	All women aged 18–49 years from Los Angeles County who reported eating fruits and vegetables any number of times per day, including zero (excluding unknowns and refusals).
Measures of frequency:	Weighted estimates of annual prevalence and 95% confidence interval.
Period of case definition:	Current.
Significance:	Eating a diet rich in fruit and vegetables is important for women of reproductive age for weight management, prevention of chronic disease, and intake of essential vitamins and minerals. <sup>1,2</sup> Furthermore, maternal nutritional status is an important determinant of placental and fetal growth, and clinical studies have shown a positive association between a healthy diet prior to conception and during pregnancy and improved birth outcomes. <sup>3-5</sup> The Clinical Work Group of the Select Panel on Preconception Care recommends that women of reproductive age should be counseled to consume a well-balanced diet including fruits and vegetables, iron and calcium-rich foods, protein-containing foods, as well as 400 $\mu\text{g}$ of folic acid daily. <sup>6</sup>
Limitations of indicator:	Respondents were not given a definition of serving size leading to a possible overestimation or underestimation of persons meeting national fruit and vegetable consumption objectives. Studies have demonstrated a dose-response effect associated with increased consumption of fruits and vegetables, not a threshold effect of 5 servings/day. <sup>7</sup> The indicator does not convey the average number of daily servings of fruits and vegetables consumed. Although the

retest consistency of participant responses has been validated in multiple populations, estimates of fruit and vegetable intake from abbreviated food questionnaires, such as the BRFSS fruit and vegetable module, are lower than other methods of dietary assessment.<sup>8,9</sup> Therefore, reliability and validity of the LACHS fruit and vegetable consumption items is considered to be moderate. Also, LACHS is a telephone survey that includes only households that have access to landline phones. Hence, non coverage and non response can be a potential source of bias. However, weighting procedures were used to reduce bias associated with exclusion of households without landline phones<sup>10</sup>.

#### Related Healthy People

- 2010 Objective(s):
- 19-5. Increase the proportion of persons aged 2 years and older who consume at least two daily servings of fruit. Target: 75%.
  - 19-6. Increase the proportion of persons aged 2 years and older who consume at least three daily servings of vegetables, with at least one-third being dark green or orange vegetables. Target: 50%.
- 2020 Objective(s):
- NWS-14 Increase the contribution of fruits to the diets of the population aged 2 years and older  
Target: 0.9cup equivalents per 1,000 calories

#### References:

1. US Department of Health and Human Services, US Department of Agriculture. Dietary guidelines for Americans, 2005. 6th ed. Washington, DC: US Government Printing Office; 2005. Available at <http://www.health.gov/dietaryguidelines>.
2. Rolls BJ, Ello-Martin JA, Tohill BC. What can Intervention Studies Tell us about the Relationship between Fruit and Vegetable Consumption and Weight Management? *Nutr Rev* 2004; 62: 1--17.
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7. Centers for Disease Control and Prevention. Fruit and vegetable consumption among adults—United States, 2005. MMWR 2007 Mar 16; 56(10): 213-217. Available from: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5610a2.htm>
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10. LACHS 2007. Summary of Survey Methodology. 2008, p.3. [http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20\(amended\).pdf](http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20(amended).pdf)

<b>Indicator:</b>	<b>Obesity (F2a)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Obesity and Overweight
Demographic Group:	Women aged 18–49 years.
Data resource:	LACH Survey <a href="http://publichealth.lacounty.gov/ha/hasurveyintro.htm">http://publichealth.lacounty.gov/ha/hasurveyintro.htm</a>
Data availability:	2005, 2007
Numerator:	Women aged 18-49 who reported body mass index (BMI) of 30 kg/m <sup>2</sup> or greater  Obesity: BMI greater than or equal to 30 kg/m <sup>2</sup> .
Denominator:	Women aged 18-49 who reported data on their BMI (calculated using self-reported weight and height) excluding unknowns and refusals.
Measures of frequency:	Weighted estimates of annual prevalence and 95% confidence interval.
Period of case definition:	Current.
Significance:	In the non-parent state, obesity contributes to numerous adverse health conditions including type II diabetes, hypertension, heart disease, a variety of cancers, and infertility. <sup>1-4</sup> Obesity is also associated with a host of unfavorable perinatal health outcomes including neural tube defects, labor and delivery complications, fetal and neonatal death, and maternal complications such as gestational diabetes and preeclampsia. <sup>5-9</sup> While health risks are better established for obese persons, overweight is a predictor of subsequent obesity. <sup>3</sup> Therefore, several professional health organizations and councils, in addition to the Clinical Work Group of the Select Panel on Preconception Care workgroup recommends that all women have their BMI calculated at least annually. <sup>10</sup> Furthermore, women with a BMI of 25 kg/m <sup>2</sup> or greater should be counseled about their own health risks as well as those that may occur related to pregnancy. And, overweight and obese women should be provided with healthy strategies to achieve a healthier body weight, especially prior to any future pregnancies.

Limitations of indicator: Height and weight are self-reported by the participant but are not verified using medical records data. Women have been shown to underreport weight, which may lead to an underestimation of BMI.<sup>11</sup>  
LACHS is a telephone survey that includes only households that have access to landline phones. Hence, non coverage and non response can be a potential source of bias. However, weighting procedures were used to reduce bias associated with exclusion of households without landline phones<sup>12</sup>.

#### Related Healthy People

2010 Objective(s): 19-1. Increase the proportion of adults who are at a healthy weight. Target: 60%.  
19-2. Reduce the proportion of adults who are obese. Target: 15%.

2020 Objective(s): NWS-8: Increase the proportion of adults with a healthy weight.  
Target: 33.9%  
NWS- 9: Reduce the proportion of children and adolescents who are considered obese  
Target: 30.6%.

#### References:

1. Institute of Medicine. Influence of pregnancy weight on maternal child health: a workshop report. Washington, DC: National Academy Press; 2007.
2. Sarwer DB, Allison KC, Gibbons LM, Markowitz JT, Nelson DB. Pregnancy and obesity: a review and agenda for future research. *J Womens Health (Larchmt)* 2006; 15:720-33.
3. McTigue KM, Harris R, Hemphill B, et al. Screening and interventions for obesity in adults: summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med* 2003; 139:933-49.
4. Dixit A, Girling JC. Obesity and pregnancy. *J Obstet Gynaecol* 2008; 28:14-23.
5. Rich-Edwards JW, Goldman MB, Willett WC, et al. Adolescent body mass index and infertility caused by ovulatory disorder. *Am J Obstet Gynecol* 1994;171:171-7.
6. Watkins ML, Rasmussen SA, Honein MA, Botto LD, Moore CA. Maternal obesity and risk for birth defects. *Pediatrics* 2003;111:1152-8.
7. Cedergren MI. Maternal morbid obesity and the risk of adverse pregnancy outcome. *Obstet Gynecol* 2004;103:219-24.
8. Cnattingius S, Bergstrom R, Lipworth L, Kramer MS. Prepregnancy weight and the risk of adverse pregnancy outcomes. *N Engl J Med* 1998;338:147-52.
9. Baeten JM, Bukusi EA, Lambe M. Pregnancy complications and outcomes among overweight and obese nulliparous women. *Am J Public Health* 2001;91:436-40.

10. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S345-S356.
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[http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20\(amended\).pdf](http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20(amended).pdf)

<b>Indicator:</b>	<b>Pre-pregnancy Overweight and Obesity (F3a)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Overweight and Obesity
Demographic group:	Women having a live birth
Data resource:	LAMB Survey <a href="http://LALAMB.org">http://LALAMB.org</a>
Data availability:	2005, 2007, 2010
Numerator:	Women who delivered a live birth in a given year in Los Angeles County who reported pre-pregnancy body mass index (BMI) of 25 kg/m <sup>2</sup> or greater Overweight: body mass index (BMI) of 25 kg/m <sup>2</sup> or greater but less than 30 kg/m <sup>2</sup> . Obesity: BMI greater than or equal to 30 kg/m <sup>2</sup> .
Denominator:	Women who delivered a live birth in a given year in Los Angeles County who reported data on their BMI (calculated using self-reported weight and height) excluding unknowns and refusals.
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	Before the pregnancy resulting in the most recent live birth.
Significance:	In the non-pregnant state, obesity contributes to numerous adverse health conditions including type II diabetes, hypertension, heart disease, a variety of cancers, and infertility. <sup>1-4</sup> Obesity is also associated with a host of unfavorable perinatal health outcomes including neural tube defects, labor and delivery complications, fetal and neonatal death, and maternal complications such as gestational diabetes and preeclampsia. <sup>5-9</sup> While health risks are better established for obese persons, overweight is a predictor of subsequent obesity. <sup>3</sup> In addition to steadily increasing obesity rates in the general U.S. population, a notable increase toward higher pre-pregnancy BMI in the U.S. has been demonstrated. <sup>10</sup> Therefore, several professional health organizations and councils, in addition to the Clinical Work Group of the Select Panel on

Preconception Care workgroup recommends that all women have their BMI calculated at least annually.<sup>11</sup> Furthermore, women with a BMI of 25 kg/m<sup>2</sup> or greater should be counseled about their own health risks as well as those that may occur related to pregnancy. And, overweight and obese women should be provided with healthy strategies to achieve a healthier body weight, especially prior to any future pregnancies.

Limitations of indicator: Maternal weight and height from the LAMB are based on maternal recall.

#### Related Healthy People

2010 Objective(s): 19-1. Increase the proportion of adults who are at a healthy weight. Target: 60%.  
19-2. Reduce the proportion of adults who are obese. Target: 15%.

2020 Objective(s): NWS-8: Increase the proportion of adults with a healthy weight.  
Target: 33.9%  
NWS- 9: Reduce the proportion of children and adolescents who are considered obese  
Target: 30.6%.

#### References:

1. Institute of Medicine. Influence of pregnancy weight on maternal child health: a workshop report. Washington, DC: National Academy Press; 2007.
2. Sarwer DB, Allison KC, Gibbons LM, Markowitz JT, Nelson DB. Pregnancy and obesity: a review and agenda for future research. *J Womens Health (Larchmt)* 2006; 15:720-33.
3. McTigue KM, Harris R, Hemphill B, et al. Screening and interventions for obesity in adults: summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med* 2003; 139:933-49.
4. Dixit A, Girling JC. Obesity and pregnancy. *J Obstet Gynaecol* 2008; 28:14-23.
5. Rich-Edwards JW, Goldman MB, Willett WC, et al. Adolescent body mass index and infertility caused by ovulatory disorder. *Am J Obstet Gynecol* 1994;171:171-7.
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7. Cedergren MI. Maternal morbid obesity and the risk of adverse pregnancy outcome. *Obstet Gynecol* 2004;103:219-24.
8. Cnattingius S, Bergstrom R, Lipworth L, Kramer MS. Prepregnancy weight and the risk of adverse pregnancy outcomes. *N Engl J Med* 1998;338:147-52.

9. Baeten JM, Bukusi EA, Lambe M. Pregnancy complications and outcomes among overweight and obese nulliparous women. *Am J Public Health* 2001;91:436-40.
10. Yeh J, Shelton JA. Increasing prepregnancy body mass index: Analysis of trends and contributing variables. *Am J Obstet Gynecol* 2005; 193:1994-98.
11. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S345-S356.

<b>Indicator:</b>	<b>Pre-pregnancy Overweight and Obesity (F3b)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Overweight and Obesity
Demographic group:	Women having a fetal/infant death
Data resource:	LAHOPE  <a href="http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html">http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html</a>
Data availability:	2007- 2009
Numerator:	Women having a fetal/infant death in Los Angeles County in 2007-2009 who reported pre-pregnancy body mass index (BMI) of 25 kg/m <sup>2</sup> or greater .  Overweight: Women who reported pre-pregnancy body mass index (BMI) of 25 kg/m <sup>2</sup> or greater but less than 30 kg/m <sup>2</sup> . Obesity: Women who reported pre-pregnancy BMI greater than or equal to 30 kg/m <sup>2</sup> .
Denominator:	Women having a fetal/infant death in Los Angeles County in 2007-2009 who reported data on their BMI (calculated using self-reported weight and height) excluding unknowns and refusals.
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	Before the most recent pregnancy.
Significance:	In the non-pregnant state, obesity contributes to numerous adverse health conditions including type II diabetes, hypertension, heart disease, a variety of cancers, and infertility. <sup>1-4</sup> Obesity is also associated with a host of unfavorable perinatal health outcomes including neural tube defects, labor and delivery complications, fetal and neonatal death, and maternal complications such as gestational diabetes and preeclampsia. <sup>5-9</sup> While health risks are better established for obese persons, overweight is a

predictor of subsequent obesity.<sup>3</sup> In addition to steadily increasing obesity rates in the general U.S. population, a notable increase toward higher pre-pregnancy BMI in the U.S. has been demonstrated.<sup>10</sup> Therefore, several professional health organizations and councils, in addition to the Clinical Work Group of the Select Panel on Preconception Care workgroup recommends that all women have their BMI calculated at least annually.<sup>11</sup> Furthermore, women with a BMI of 25 kg/m<sup>2</sup> or greater should be counseled about their own health risks as well as those that may occur related to pregnancy. And, overweight and obese women should be provided with healthy strategies to achieve a healthier body weight, especially prior to any future pregnancies.

Limitations of indicator: Maternal weight and height from the LAHOPE are based on maternal recall.

Related Healthy People  
2010 Objective(s):

19-1. Increase the proportion of adults who are at a healthy weight. Target: 60%.  
19-2. Reduce the proportion of adults who are obese. Target: 15%.

2020 Objective(s):

NWS-8: Increase the proportion of adults with a healthy weight.  
Target: 33.9%  
NWS- 9: Reduce the proportion of children and adolescents who are considered obese  
Target: 30.6%.

## References:

1. Institute of Medicine. Influence of pregnancy weight on maternal child health: a workshop report. Washington, DC: National Academy Press; 2007.
2. Sarwer DB, Allison KC, Gibbons LM, Markowitz JT, Nelson DB. Pregnancy and obesity: a review and agenda for future research. *J Womens Health (Larchmt)* 2006; 15:720-33.
3. McTigue KM, Harris R, Hemphill B, et al. Screening and interventions for obesity in adults: summary of the evidence for the US Preventive Services Task Force. *Ann Intern Med* 2003; 139:933-49.
4. Dixit A, Girling JC. Obesity and pregnancy. *J Obstet Gynaecol* 2008; 28:14-23.
5. Rich-Edwards JW, Goldman MB, Willett WC, et al. Adolescent body mass index and infertility caused by ovulatory disorder. *Am J Obstet Gynecol* 1994;171:171-7.
6. Watkins ML, Rasmussen SA, Honein MA, Botto LD, Moore CA. Maternal obesity and risk for birth defects. *Pediatrics* 2003;111:1152-8.

7. Cedergren MI. Maternal morbid obesity and the risk of adverse pregnancy outcome. *Obstet Gynecol* 2004;103:219-24.
8. Cnattingius S, Bergstrom R, Lipworth L, Kramer MS. Prepregnancy weight and the risk of adverse pregnancy outcomes. *N Engl J Med* 1998;338:147-52.
9. Baeten JM, Bukusi EA, Lambe M. Pregnancy complications and outcomes among overweight and obese nulliparous women. *Am J Public Health* 2001;91:436-40.
10. Yeh J, Shelton JA. Increasing prepregnancy body mass index: Analysis of trends and contributing variables. *Am J Obstet Gynecol* 2005; 193:1994-98.
11. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S345-S356.

<b>Indicator:</b>	<b>Folic Acid Supplementation (F4a)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Folic Acid Supplementation
Demographic Group:	Women having a live birth.
Data resource:	LAMB <a href="http://lalamb.org">http://lalamb.org</a>
Data Availability:	2005, 2007, 2010
Numerator:	Women who delivered a live birth in a given year in Los Angeles County and reported that they did not take a multivitamin, prenatal vitamin or folic acid vitamin during the month prior to pregnancy.
Denominator:	Women who delivered a live birth in a given year in Los Angeles County and reported that they did or did not take multivitamin, prenatal vitamin or folic acid vitamin during the month prior to pregnancy (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	Within a month prior to the pregnancy resulted in recent live birth.
Significance:	Neural tube defects (NTDs) affect 3,000 pregnancies in the US each year <sup>1</sup> . Up to 70% of all NTDs can be prevented when women capable of becoming pregnant consume the recommended amount of folic acid prior to conception <sup>2</sup> . The Clinical Work Group of the Select Panel on Preconception Care and other organizations recommend that all women of reproductive age take a folic acid containing multivitamin (400 µg daily) <sup>3,4</sup> . These guidelines are particularly important since half of all pregnancies are unplanned. Data from the annual survey conducted for the March of Dimes by the Gallup organization indicate that only 40% of all US women aged 18-45 consumed folic acid supplements daily in 2007 (March of Dimes, unpublished data, 2007).

Limitations of indicator: Data are self-reported and may be subject to recall bias. However, studies assessing the validity of self-reported supplement intake show good correlation to the amount of supplements reported and measures of nutrients found in blood samples.<sup>5-7</sup>

Related Healthy People  
2010 objective(s)

16-16a. Consumption of at least 400µg of folic acid each day from fortified foods or dietary supplements by nonpregnant women aged 15 to 44 years. Target: 80%.

2020 objective(s):

MICH-14 Increase the proportion of women of childbearing potential with intake of at least 400 ug of folic acid from fortified foods or dietary supplements.  
Target: 26.2%

MICH-16.2 Took multivitamins/folic acid prior to pregnancy  
Target: 33.1%

### References:

1. Division of Birth Defects, National Center for Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. Use of supplements containing folic acid among women of childbearing age—United States. Available at [www.cdc.gov/ncbddd/folicacid/data.html](http://www.cdc.gov/ncbddd/folicacid/data.html).
2. Milunsky A, Jick H, Jick SS, et al. Multivitamin/folic acid supplementation in early pregnancy reduces the prevalence of neural tube defects. *JAMA* 1989; 262:2847-2852.
3. Institute of Medicine. Dietary reference intake for thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. Washington, DC. National Academy Press, 1998.
4. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S345-S356.
5. Burton A, Wilson S, and Gillies AJ. Folic acid: Is self reported use of supplements accurate? *J Epidemiol. Community Health* 2001; 55: 841-842.
6. Yen J, Zoumas-Morse C, Pakiz B, Rock CL. Folate intake assessment: Validation of a new approach. *J Am Diet Assoc* 2003; 103: 991-1000.
7. Satia-Aboutal J, Patterson RE, King IB, et al. Reliability and validity of self-report of vitamin and mineral supplement use in the Vitamins and Lifestyle Study. *Am J Epidemiol* 2003; 157: 944–954.

<b>Indicator:</b>	<b>Folic Acid Supplementation (F4b)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Folic Acid Supplementation
Demographic Group:	Women who had fetal/infant death.
Data resource:	LAHOPE <a href="http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html">http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html</a>
Data availability:	2007- 2009
Numerator:	Women having a fetal/infant death in Los Angeles County within 2007-2009 who reported that they did not take a multivitamin, prenatal vitamin or folic acid vitamin during the month prior to pregnancy
Denominator:	Women having a fetal/infant death in Los Angeles County within 2007-2009 who reported that they did or did not take a multivitamin, prenatal vitamin or folic acid vitamin during the month prior to pregnancy (excluding unknowns and refusals).
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	Within a month prior to the recent pregnancy.
Significance:	Neural tube defects (NTDs) affect 3,000 pregnancies in the US each year <sup>1</sup> . Up to 70% of all NTDs can be prevented when women capable of becoming pregnant consume the recommended amount of folic acid prior to conception <sup>2</sup> . The Clinical Work Group of the Select Panel on Preconception Care and other organizations recommend that all women of reproductive age take a folic acid containing multivitamin (400 µg daily) <sup>3,4</sup> . These guidelines are particularly important since half of all pregnancies are unplanned. Data from the annual survey conducted for the March of Dimes by the Gallup organization indicate that only 40% of all US women aged 18-45 consumed folic acid supplements daily in 2007 (March of Dimes, unpublished data, 2007).

Limitations of indicator: Data are self-reported and may be subject to recall bias. However, studies assessing the validity of self-reported supplement intake show good correlation to the amount of supplements reported and measures of nutrients found in blood samples.<sup>5-7</sup>

Related Healthy People  
2010 objective(s)

16-16a. Consumption of at least 400µg of folic acid each day from fortified foods or dietary supplements by nonpregnant women aged 15 to 44 years. Target: 80%.

2020 objective(s):

MICH-14 Increase the proportion of women of childbearing potential with intake of at least 400 ug of folic acid from fortified foods or dietary supplements.  
Target: 26.2%

MICH-16.2 Took multivitamins/folic acid prior to pregnancy  
Target: 33.1%

### References:

8. Division of Birth Defects, National Center for Birth Defects and Developmental Disabilities, Centers for Disease Control and Prevention. Use of supplements containing folic acid among women of childbearing age—United States. Available at [www.cdc.gov/ncbddd/folicacid/data.html](http://www.cdc.gov/ncbddd/folicacid/data.html).
9. Milunsky A, Jick H, Jick SS, et al. Multivitamin/folic acid supplementation in early pregnancy reduces the prevalence of neural tube defects. *JAMA* 1989; 262:2847-2852.
10. Institute of Medicine. Dietary reference intake for thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. Washington, DC. National Academy Press, 1998.
11. Gardiner PM, Nelson L, Shellhaas CS, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B): S345-S356.
12. Burton A, Wilson S, and Gillies AJ. Folic acid: Is self reported use of supplements accurate? *J Epidemiol. Community Health* 2001; 55: 841-842.
13. Yen J, Zoumas-Morse C, Pakiz B, Rock CL. Folate intake assessment: Validation of a new approach. *J Am Diet Assoc* 2003; 103: 991-1000.
14. Satia-Aboutal J, Patterson RE, King IB, et al. Reliability and validity of self-report of vitamin and mineral supplement use in the Vitamins and Lifestyle Study. *Am J Epidemiol* 2003; 157: 944–954.

<b>Indicator</b>	<b>Physical Activity (F5a)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Adequate Physical Activity
Demographic group:	Women aged 18-49 years.
Data resource:	Los Angeles County Health Survey (LACHS) <a href="http://publichealth.lacounty.gov/ha/hasurveyintro.htm">http://publichealth.lacounty.gov/ha/hasurveyintro.htm</a>
Data availability:	2005, 2007
Numerator:	<p>Women aged 18-49 years who reported doing enough moderate and/or vigorous physical activity in a usual week to meet the recommended levels of physical activity.</p> <p>To meet Physical Activity Guidelines<sup>1</sup> at least one of the following criteria must be fulfilled:</p> <ul style="list-style-type: none"> <li>i) Vigorous Activity - hard physical activity causing heavy sweating, large increases in breathing and heart rate for 20+ minutes, at least 3 days/wk,</li> <li>ii) Moderate Activity - cause light sweating, slight increases in breathing and heart rate for 30+ minutes, at least 5 days/wk .</li> <li>iii) A combination of Vigorous and Moderate Activity meeting the time criteria for at least 5 days/wk.</li> </ul>
Denominator:	Women aged 18-49 years who reported doing or not doing enough moderate and/or vigorous physical activity in a usual week to meet the recommended levels of physical activity (excluding unknowns and refusals).
Measures of frequency:	Weighted estimates of annual prevalence and 95% confidence interval.
Period of case definition:	Current.
Significance:	Physical inactivity and unhealthy eating contribute to obesity and a number of chronic diseases, including some cancers, cardiovascular disease, and diabetes. Adequate physical activity and maintaining a healthy weight are important for women of reproductive age due to adverse perinatal outcomes associated with maternal obesity which include neural tube defects, stillbirth, preterm delivery, gestational diabetes, hypertension, thromboembolic

disorders, macrosomia, low Apgar scores, postpartum anemia, and cesarean delivery.<sup>1</sup> The Clinical Work Group of the Select Panel on Preconception Care recommends that all women should be assessed for participation in weight-bearing and aerobic exercise, and offered recommendations for participating in physical activities that are appropriate to their physical abilities.<sup>2</sup>

Limitations of indicator: The LACHS physical activity items elicit self-reported data and are subject to recall bias. The indicator assesses moderate and vigorous leisure time, household, and transportation activities, but does not capture information on occupational activities that may qualify as moderate or vigorous activities. At present, little is known about the reliability and validity of the LACHS items used to assess adequate physical activity. Also, LACHS is a telephone survey that includes only households that have access to landline phones. Hence, non coverage and non response can be a potential source of bias. However, weighting procedures were used to reduce bias associated with exclusion of households without landline phones<sup>3</sup>.

Related Healthy  
2010 Objective(s):

22-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Target: 20%.

22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%.

2020 objective(s):

PA-2.11 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/weeks, or 75 minutes/week of vigorous intensity, or an equivalent combination.

Target: 47.92%

PA-2.2 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for more than 300 minutes/week, or more than 150 minutes/week of vigorous intensity, or an equivalent combination.

Target: 31.3%.

PA-2.4 Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity. Target: 20.1%.

## References:

1. Vigorous Activity: U.S. Department of Health and Human Services. Healthy People 2010: Understanding and Improving Health. 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000. Moderate Activity: Centers for Disease Control and Prevention/American College of Sports Medicine:  
  
<http://www.cdc.gov/nccdphp/dnpa/physical/recommendations/index.htm>]
2. Gardiner P, Nelson L, Shellhaas C, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S345-356.
3. LACHS 2007. Summary of Survey Methodology. 2008, p.3.  
[http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20\(amended\).pdf](http://publichealth.lacounty.gov/ha/docs/2007%20LACHS/2007%20LA%20Health%20Survey%20Methods%20(amended).pdf)

<b>Indicator:</b>	<b>Recommended Physical Activity (F5b)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Adequate Physical Activity
Demographic group:	Women having a live birth.
Data resource:	LAMB Survey <a href="http://LALAMB.org">http://LALAMB.org</a>
Data availability:	2005, 2007, 2009
Numerator:	Women who delivered a live birth in a given year in Los Angeles County who reported that they did not exercise for 30 minutes or more (For example, walking for excising, swimming , gardening, etc) during the last three months of pregnancy
Denominator:	Women who delivered a live birth in a given year in Los Angeles County reporting who reported that they did or did not exercise for 30 minutes or more (excluding unknowns and refusals) during the last three months of pregnancy
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	During the last 3 months of the pregnancy that resulted in the most recent live birth.
Significance:	Physical inactivity and unhealthy eating contribute to obesity and a number of chronic diseases, including some cancers, cardiovascular disease, and diabetes. Adequate physical activity and maintaining a healthy weight are important for women of reproductive age due to adverse perinatal outcomes associated with maternal obesity which include neural tube defects, stillbirth, preterm delivery, gestational diabetes, hypertension, thromboembolic disorders, macrosomia, low Apgar scores, postpartum anemia, and cesarean delivery. <sup>1</sup> The Clinical Work Group of the Select Panel on Preconception Care recommends that all women should be assessed for participation in weight-bearing and aerobic exercise, and offered recommendations

for participating in physical activities that are appropriate to their physical abilities.<sup>2</sup>

- Limitations of indicator: LAMB data are self-reported and are subject to misinterpretations of the response options. Data are also subject to non-response bias.
- Related Healthy  
2010 Objective(s): 22-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Target: 20%.
- 22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%.
- 2020 objective(s): PA-2.11 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/weeks, or 75 minutes/week of vigorous intensity, or an equivalent combination.  
Target: 47.92%
- PA-2.2 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for more than 300 minutes/week, or more than 150 minutes/week of vigorous intensity, or an equivalent combination.  
Target: 31.3%.
- PA-2.4 Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity. Target: 20.1%.

## References:

1. Vigorous Activity: U.S. Department of Health and Human Services. Healthy People 2010: Understanding and Improving Health. 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000. Moderate Activity: Centers for Disease Control and Prevention/American College of Sports Medicine: <http://www.cdc.gov/nccdphp/dnpa/physical/recommendations/index.htm>
2. Gardiner P, Nelson L, Shellhaas C, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S345-356.

<b>Indicator:</b>	<b>Recommended Physical Activity (F5c)</b>
Domain:	Nutrition and Physical Activity
Sub-domain:	Adequate Physical Activity
Demographic group:	Women having a fetal/infant death
Data resource:	LAHOPE  <a href="http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html">http://publichealth.lacounty.gov/mch/LAHOPE/LAHOPE.html</a>
Data availability:	2007- 2009
Numerator:	Women having a fetal/infant death in Los Angeles County within 2007-2009 who reported that they did not exercise for 30 minutes or more (For example, walking for excising, swimming , gardening, etc) during the last three months of pregnancy.
Denominator:	Women having a fetal/infant death in Los Angeles County within 2007-2009 who reported that they had or did not exercise for 30 minutes or more (excluding unknowns and refusals) during the last three months of pregnancy.
Measures of frequency:	Crude annual prevalence and by selected maternal demographic characteristics, weighted to account for unequal probabilities of selection, and adjust for non-response and mail/telephone non-coverage.
Period of case definition:	During the last 3 months of the most recent pregnancy.
Significance:	Physical inactivity and unhealthy eating contribute to obesity and a number of chronic diseases, including some cancers, cardiovascular disease, and diabetes. Adequate physical activity and maintaining a healthy weight are important for women of reproductive age due to adverse perinatal outcomes associated with maternal obesity which include neural tube defects, stillbirth, preterm delivery, gestational diabetes, hypertension, thromboembolic disorders, macrosomia, low Apgar scores, postpartum anemia, and cesarean delivery. <sup>1</sup> The Clinical Work Group of the Select Panel on Preconception Care recommends that all women should be assessed for participation in weight-

bearing and aerobic exercise, and offered recommendations for participating in physical activities that are appropriate to their physical abilities.<sup>2</sup>

Limitations of indicator: LAHOPE data are self-reported and are subject to misinterpretations of the response options. Data are also subject to non-response bias.

Related Healthy  
2010 Objective(s):

22-1. Reduce the proportion of adults who engage in no leisure-time physical activity. Target: 20%.

22-2. Increase the proportion of adults who engage regularly, preferably daily, in moderate physical activity for at least 30 minutes per day. Target: 30%.

2020 objective(s):

PA-2.1 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/weeks, or 75 minutes/week of vigorous intensity, or an equivalent combination.

Target: 47.92%

PA-2.2 Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for more than 300 minutes/week, or more than 150 minutes/week of vigorous intensity, or an equivalent combination.

Target: 31.3%.

PA-2.4 Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle-strengthening activity. Target: 20.1%.

## References:

1. Vigorous Activity: U.S. Department of Health and Human Services. Healthy People 2010: Understanding and Improving Health. 2nd ed. Washington, DC: U.S. Government Printing Office, November 2000. Moderate Activity: Centers for Disease Control and Prevention/American College of Sports Medicine: <http://www.cdc.gov/nccdphp/dnpa/physical/recommendations/index.htm>
2. Gardiner P, Nelson L, Shellhaas C, et al. The clinical content of preconception care: nutrition and dietary supplements. *Am J Obstet Gynecol* 2008; 199 (6 Suppl B):S345-356.