

## Health Behavior Determinants

### Diet and Exercise

Health Determinant: Diet and Exercise

Health Behavior Component: Physical Inactivity

Percent and Rank: 2007 – 51.1% (39)  
2008 – 43% (26)

Healthiest Wisconsin 2010 Health Priority: Overweight, Obesity and Lack of Physical Activity

Waupaca County has made significant improvement in getting its citizens up and moving. For the first time in a number of years, we have dropped below the state average for physical inactivity and have succeeded in reaching the upper end of the upper middle quartile.

The impact of increased physical activity is great. As quoted in Healthiest Wisconsin 2010, the CDC reports that “35% of the coronary heart disease among people who lead a sedentary lifestyle could have been prevented by increasing physical activity” (p. 75). The report goes on to say regular physical activity like walking, parking further away, yard work, and taking the stairs, may “prevent obesity, improve obesity-associated diseases, reduce mortality and may build and maintain healthy bones, muscles and joints” (p. 75). Physical activity needs to become a part of our daily lives for it to have a sustained effect. Waupaca County has taken steps to encourage physical activity in its residents.

The county has seen development of a number of strategies to encourage increased activity in Waupaca County residents. One of the strategies is the development of a system of walking/skiing/snowshoeing trails. Brochures identifying these accompany this report. Individual communities that have them have also expanded classes and hours of indoor swimming pools to make them more accessible to all age groups. Pools in the county have generally proven to be a very affordable venue for exercise for all age groups. The City of Waupaca also hosts an annual triathlon in August. This brings in athletes not only from Waupaca County

communities, but challenges residents from the Fox Valley region and surrounding states to participate in the swim, run and bike race. There also is a mini-triathlon the same day for those who are interested in competing but not yet ready for the “big” race. Fremont also hosts a one-mile, walk or run, Jingle Jog, annually just before the holidays.

In the professional realm, the Health Services Division of the Waupaca County Department of Health and Human Services has instituted a NuAct Coalition (Nutrition and Physical Activity) whose mission is to help Waupaca County residents improve their health through physical activity and healthy eating. The group is comprised of private citizens and county Health Services employees. The coalition has been involved in the development of the Waupaca County Trail System, mentioned earlier, and sponsors a “Movin’ Communities” activity program for county businesses, libraries and recreation centers. They have also had displays regarding nutrition and physical activity at grocery stores, health fairs and libraries and have worked closely with the WOW (Working on Wellness) Initiative of the Rural Health Grant which promotes wellness to area businesses and the self-employed with special emphasis on the farming community.

All of these efforts in the area of physical activity have had a very positive impact on this determinant of health. Sustained efforts should also improve future health outcomes.

Health Determinant: Diet and Exercise

Health Behavior Component: Obesity

Percent and Rank: 2007 – 66.1% (54)  
2008 – 64.6% (43)

Healthiest Wisconsin 2010 Health Priority: Overweight, Obesity and Lack of Physical Activity

Many of the interventions outlined in the previous section have likely contributed to the significant reduction in those who are overweight and obese in Waupaca County. However, the fact that 64.6% of the population is still overweight means that sustaining and boosting these activities is essential. Waupaca County still far exceeds the average Wisconsin rate of 24.1% and is a long way from Healthiest Wisconsin 2010 Healthy Priority target of 15%. The fact that we rank 43<sup>rd</sup> of 73 simply means many Wisconsinites are overweight and that can have serious long-term health effects. Diabetes and heart disease are two of the most serious.

Waupaca County matches the regional average and exceeds the state rate for diabetes prevalence. Experts consider many cases of diabetes to be preventable. Diet and exercise play an important role in prevention.

The editorial note of the Morbidity and Mortality Weekly Report, (October 31, 2008), states, “Factors associated with an increased risk for diabetes include older age, lower education attainment, physical inactivity, obesity, weight gain and being categorized in a racial/ethnic minority population. Of these factors, obesity has been identified as a major risk factor in the increasing incidence of diabetes; the growth in diabetes prevalence has been concomitant with growth in obesity”, (p. 1171). Continuing to improve our strategies to help Waupaca County citizens achieve healthy weight should be one of our primary concerns. The health and socioeconomic gain would be significant. Illustration E shows the burden of diabetes in Waupaca County and the accompanying healthcare costs.

The Health Services Division of the Waupaca County Department of Health and Human Services maintains a close relationship with Waupaca County school nurses and health educators in an effort to promote education and intervention to reduce the initiation of behaviors contributing to obesity and inactivity in children and youth. The NuAct Coalition has developed a Resource Kit for Waupaca County Schools including Healthy School Environment Action Plans and School Wellness Policy Implementation. See Appendix C.

With this focus in mind, the Waupaca County WIC program, in partnership with five other WIC projects, applied for and received a three-year grant from the University of Wisconsin Medical School. Funds are to be used to address the epidemic of overweight and obesity through a wellness project entitled “FIT Families”. The project is using a multi-system approach to build healthy families, emphasizing adult modeling to establish healthy behaviors in developing children and engaging the community to support healthy environments for families. Positive effects of the partnership have already been noted as more people learn more about leading healthier lives. The goal is that health outcomes will reflect the change.

## Illustration E

The 2008 Burden of Diabetes in

**Waupaca County****Diabetes Prevalence - Waupaca County**

Age category	Estimated Number Diagnosed (%)	Estimated Number Undiagnosed (%)	Estimated Total Number (%)
♦ Ages 18 – 44	850 (4.7%)	360 (2.0%)	1,210 (6.7%)
♦ Ages 45 – 64	1,110 (7.9%)	470 (3.3%)	1,580 (11.2%)
♦ Ages 65 +	1,530 (17.8%)	650 (7.5%)	2,180 (25.3%)
♦ All ages adult *	3,490 (7.8%)	1,480 (3.3%)	4,970 (11.1%)

\* Percent is age-adjusted (direct method) to the United States 2000 standard population.  
Total Percent may not equal the sum of diagnosed percent and undiagnosed percent, due to rounding.

**2006 Hospitalizations - Waupaca County**

	Total Number	Number Diabetes-related (% of total)	Total Charges	Diabetes-related Charges (% of total charges)
All ages	6,571	1,047 (15.9%)	\$88,958,600	\$14,563,800 (16.4%)

Health Determinant: Diet and Exercise

Health Behavior Component: Less Than 5 a Day

Percent and Rank: 2007 – 81.9% (52)  
2008 – 80% (51)

Healthiest Wisconsin 2010 Health Priority: Overweight, Obesity and Lack of Physical Activity; Adequate and Appropriate Nutrition

Waupaca County has improved its statistics with regard to fruit and vegetable consumption but still lags behind the state average of 77.2%. Strategies to increase fruit and vegetable consumption have been undertaken in schools and through community programs.

The NuAct Coalition had a display and handouts in Fall, 2008, encouraging and giving recipes for “Healthy Halloween Treats”. School nurses continue to attempt to intervene in school lunch menus and vending machine offerings in the school systems.

The WIC program offers vouchers for fresh produce from local farm markets each summer. 400 families participated in the Farmers Market Nutrition Program in 2007-2008. For some participants, this is an introduction to low cost, healthy, fresh-from-the-farm produce. WIC’s mission is to “promote and maintain the health and well-being of nutritionally at-risk pregnant, breastfeeding, and post-partum women, infants and children.” Introducing parents and children to healthier alternatives to high fat/high sugar snacks or treats is one of WIC’s recurring themes.

The Food Share Program in Waupaca County continues to grow as the economy continues to decline. Food Share applicants, once accepted into the program, receive vouchers but no referral for diet and nutrition-related issues and no referral for nutrition or resource management. WIC participants do receive quarterly nutrition education from a Waupaca County Public Health Nutritionist and the opportunity to participate in the programs discussed earlier. Nutrition

pamphlets are available in English and Spanish for all Health and Human Services clients who can read at an 8<sup>th</sup> grade level. Nutrition education is provided for persons over age 60 who participate in Senior Center Nutrition site meals or receive home-delivered meals but may not be conducted by a nutritionist who can speak to the seniors' specific concerns.

Food security is an issue studied by the Department of Health and Family Services. Every five years a survey of WIC participants is done to include questions about food availability, food purchase and food consumption (Appendix D1). This information yields a Food Insecurity Prevalence for that time period and breaks it down by County. See Table 9. Additional information about the Food Security Report can be found in Appendix D1 and D2. In 2007, 53% of Waupaca County WIC families surveyed reported low food security. This is up from 2002 results which indicated 46% low food security. The 2007 data places Waupaca County above the state average of 51%. Low food-secure families are at risk for hunger; very low food-secure families are hungry. In a March 1, 2008 press release, Karen Zimmerman, of the Wisconsin WIC Association, stated "In comparing the results of the survey to results five years prior, more families are at risk for hunger while slightly fewer families are hungry." Very low food security went from 19% (2002) to 14% (2007).

Most counties in the state experienced the same increase as Waupaca County, some with even larger percentage increases. Some counties, however, actually saw a decline in their food insecure populations. These include: the Menominee Tribe, Ashland, Bayfield, Burnett, Clark, Eau Claire, Florence, Juneau, Lafayette, Lincoln, Rusk, Shawano and Washington. And two counties saw declines in persons at risk of hunger. Forest County went from 43% low food security in 2002 to 17% in 2007 and Sawyer County went from 55% in 2002 to 29% in 2007. Followup with these



counties may provide useful information as we seek to solve the problems of hunger in our county.

According to Zimmerman, the WIC Food Security Survey results show that “though families are using the important WIC program to receive nutritious foods like milk, cheese, cereal and juice, they still are at risk of hunger and have a difficult time putting food on the table. While WIC is a successful program, it indicates that the problems of hunger continue to be larger than that which just one program can handle alone.”

A 2005 Waupaca County Food Security Profile outlines the many economic and demographic factors which impact food security and hunger. The profile can be found in Appendix D2.

Food Pantries are another valuable resource in the fight against hunger. Waupaca County has 11 Food Pantries. Most have seen an increase in participation in 2008. Kathy Jenner of the Waupaca Area Food Pantry told Angie Landsverk of the Waupaca County Post, (Nov. 6, 2008) “. . . historically, the first week and a half of each month saw the highest numbers at the food pantry, followed by a steady tapering off of clients during the remainder of the month. We’re not seeing that anymore. The last six months have been steady every day. We are sustaining numbers of 20 per day and about 210-220 families per month, and last month, 245 families visited the food pantry.” Jenner attributes the increases to the decline in the economy. This is of special concern because, according to Karen Zimmerman, “with a shortage of resources for food, they (people) tend to consume diets that are lower in fruits and vegetables as well as overall variety and nutritional value. Adults in food insecure households, especially women, are at increased risk for being overweight or obese, perhaps partly due to eating less costly foods that are also high in sugar, fat and calories. Adults of food insecure households also tend to have a higher risk of depression and chronic disease and poor levels of overall health.

Children in food insecure households tend to have poor levels of physical health and school achievement and higher levels of behavior and emotional problems. They may be at increased risk for overweight.” Food insecurity has wide-ranging and long-lasting effects and must be dealt with if Waupaca County health outcomes are to improve.

**Table 2. Percent of Participating WIC Households<sup>a</sup> Reporting Low and Very Low Food Security by Tribe and County of WIC Service, 2007 and 2002**

County of WIC Service	2007			2002		
	Households <sup>a</sup>	Low Food Security	Very Low Food Security	Households <sup>a</sup>	Low Food Security	Very Low Food Security
	n	%	%	n	%	%
<b>Statewide</b>	<b>19582</b>	<b>51</b>	<b>15</b>	<b>18248</b>	<b>44</b>	<b>19</b>
GLITC <sup>b</sup>	205	53	19	243	36	14
Menominee Tribe	192	36	11	167	40	10
Oneida Tribe <sup>b</sup>	185	54	17	138	45	19
Adams	71	37	13	48 <sup>c</sup>	31	13
Ashland	135	30	9	108	37	19
Barron	207	53	11	305	33	15
Bayfield	22 <sup>c</sup>	27	NR <sup>c</sup>	75	41	15
Brown	1293	58	16	1274	49	23
Buffalo	37 <sup>c</sup>	57	19	52	38	13
Burnett	97	48	21	92	49	15
Calumet	54	48	9	102	43	16
Chippewa	285	55	20	251	48	24
Clark	133	44	7	23 <sup>c</sup>	61	22
Columbia	187	56	24	103	37	10
Crawford	65	46	8	161	45	22
Dane	1208	58	18	627	49	21
Dodge	253	47	12	178	42	17
Door	83	35	13	100	32	9
Douglas	277	51	17	219	44	19
Dunn	171	54	17	158	35	13
Eau Claire	495	48	15	440	49	23
Florence	21 <sup>c</sup>	24	NR <sup>c</sup>	35 <sup>c</sup>	29	14
Fond du Lac	504	53	18	442	40	18
Forest	36 <sup>c</sup>	17	NR <sup>c</sup>	61	43	13
Grant	169	34	8	224	20	7
Green	122	49	19	23 <sup>c</sup>	43	NR <sup>c</sup>
Green Lake	71	45	14	45 <sup>c</sup>	44	13
Iowa	93	48	16	97	37	12
Iron	13 <sup>c</sup>	NR <sup>c</sup>	NR <sup>c</sup>	23 <sup>c</sup>	43	NR <sup>c</sup>
Jackson	64	52	13	78	49	19
Jefferson	225	54	12	278	45	20
Juneau	135	42	12	87	43	17
Kenosha	855	47	13	717	40	17
Kewaunee	69	45	10	55	33	13
La Crosse	335	51	17	377	48	19
Lafayette	23 <sup>c</sup>	30	NR <sup>c</sup>	27 <sup>c</sup>	37	NR <sup>c</sup>
Langlade	17 <sup>c</sup>	41	NR <sup>c</sup>	93	30	16
Lincoln	46 <sup>c</sup>	35	NR <sup>c</sup>	59	36	14
Manitowoc	364	46	17	226	42	15
Marathon	154	46	10	204	41	17
Marinette	262	42	16	179	38	15

Table 9

County of WIC Service	2007			2002		
	Households <sup>a</sup>	Low Food Security	Very Low Food Security	Households <sup>a</sup>	Low Food Security	Very Low Food Security
	n	%	%	n	%	%
Marquette	26 <sup>c</sup>	69	19	43 <sup>c</sup>	53	21
Milwaukee	3468	50	14	4051	47	20
Monroe	185	47	19	165	36	16
Oconto	135	47	16	118	42	18
Oneida	150	43	18	132	39	15
Outagamie	668	60	19	509	50	21
Ozaukee	109	44	12	73	37	16
Pepin	19 <sup>c</sup>	26	NR <sup>c</sup>	25 <sup>c</sup>	24	NR <sup>c</sup>
Pierce	170	50	12	94	30	16
Polk	144	54	15	158	34	13
Portage	189	46	16	229	36	15
Price	92	41	14	103	29	11
Racine	603	44	10	521	37	14
Richland	82	46	13	80	38	13
Rock	243	60	19	377	41	16
Rusk	99	37	12	58	40	12
St. Croix	429	57	16	193	35	17
Sauk	289	54	17	240	38	17
Sawyer	58	29	NR <sup>c</sup>	69	55	25
Shawano	46 <sup>c</sup>	41	NR <sup>c</sup>	134	42	20
Sheboygan	509	58	17	235	40	18
Taylor	90	50	21	111	41	12
Trempealeau	126	40	10	254	36	17
Vernon	89	43	7	143	37	13
Vilas	59	42	12	65	37	14
Walworth	419	59	20	239	43	13
Washburn	114	45	16	85	32	11
Washington	262	47	13	273	53	25
Waukesha	561	56	15	239	43	21
Waupaca	120	53	14	155	46	19
Waushara	75	60	24	65	38	12
Winnebago	445	54	18	514	45	23
Wood	276	50	17	304	38	19

<sup>a</sup> The number of households represents the number of (unduplicated) WIC families that visited a WIC project during the survey recruitment period and completed at least two survey questions.

<sup>b</sup> The Great Lakes Inter-Tribal Council (GLITC) includes data from sites in Bayfield, Burnett, Forest, Jackson, Sauk, Sawyer, Shawano, Vilas, and Wood counties. The Oneida Tribe includes data from Brown and Outagamie counties.

<sup>c</sup> Estimates of percent low food security and percent very low food security should only be considered minimally reliable if they are based on at least 50 households, although all available values are presented here for completeness. To protect confidentiality, cells containing fewer than five (0-4) households are not reported (NR).