

# Utah Health Status Update: Obesity and Associated Chronic Conditions

May 2010

Utah Department of Health

The obesity epidemic was established as the single greatest threat to the public's health by the Surgeon General in 2001. Since then both the national as well as the Utah adult obesity rate have continued to increase.<sup>1</sup> The 2008 Utah Behavioral Risk Factor Surveillance System (BRFSS) results show that the obesity rate for Utah adults (18+) is 24.0% (based on self-reported height and weight). The obesity rate of Utah's adults has more than doubled since 1989 when the rate was 10.5% (see Figure 1).

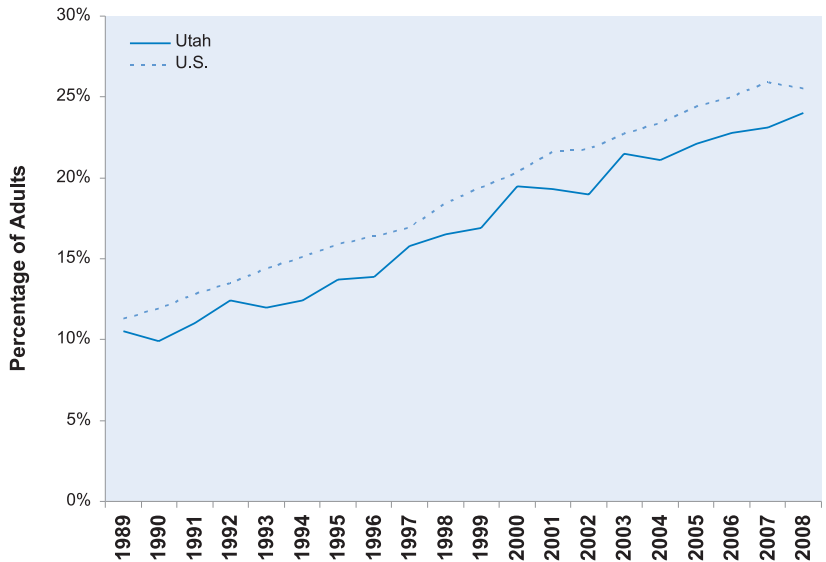
Obesity is a condition that can lead to co-morbid chronic conditions. Chronic conditions include: type 2 diabetes, hypertension (high blood pressure), high cholesterol, cardiovascular disease, angina, heart attack, stroke, certain types of arthritis, asthma, Alzheimer's disease, and some cancers. There is also an association between obesity and major depression as well as obesity and H1N1 influenza.

Figure 2 shows the percentage of Utah adults with selected chronic conditions by weight category. When compared to Utahns of ideal weight, obese Utahns had a higher percentage of chronic conditions in all cases. For example, 34.7% of obese Utahns suffered from arthritis while 20.7% of Utahns of ideal weight suffered from this condition; 12.8% of obese Utahns had current asthma compared with 6.7% of Utahns of ideal weight; 13.7% of obese Utahns had diabetes while 2.7% of Utahns of ideal weight had diabetes; and 5.8% of obese Utahns suffered from major depression while 3.4% of Utahns of ideal weight suffered major depression.

Body Mass Index (BMI) is used to categorize weight distributions in a population and is calculated by using a person's height and weight, regardless of sex. Table 1 demonstrates the BMI categories for the average Utahn by sex in 2008 and for the first time it shows the class divisions within the obese category. Class I (BMI 30.0–34.9) and Class II (BMI 35.0–39.9) are traditionally called obese and Class III (BMI 40+) is called morbidly obese.

## Obesity in Utah and the U.S.

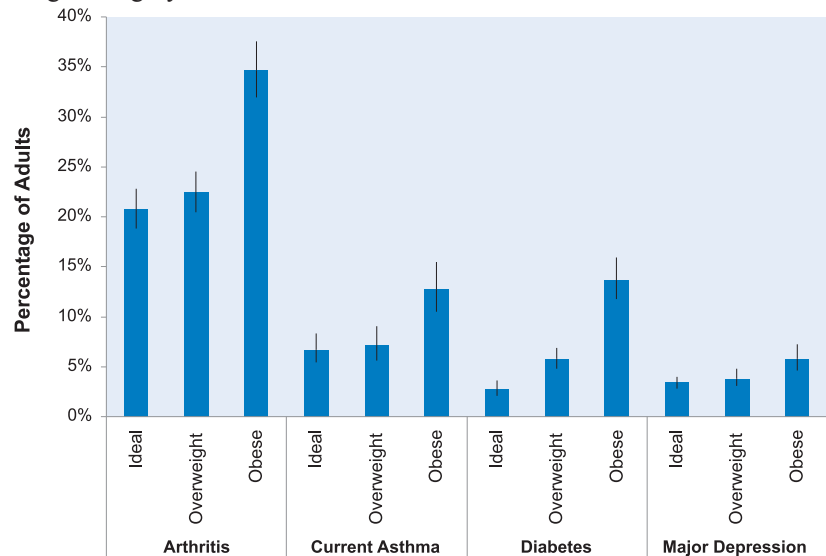
Figure 1. Percentage of adults who were obese, Utah and U.S., 1989–2008



BRFSS age-adjusted to 2000 US population.

## Chronic Conditions

Figure 2. Percentage of Utah adults aged 18+ with chronic conditions by weight category



Utah BRFSS age-adjusted to 2000 US population; arthritis 2007, asthma and diabetes 2008, and major depression 2005-2007 combined.

As previously mentioned, 24.0% of Utah adults were obese in 2008. Of those 63.7% (approximately 281,000 individuals) were classified as Class I obese, followed by 23.4% (approximately 103,000 individuals) being classified as Class II obese, and 12.9% (approximately 57,000 individuals) being classified as Class III obese.

Another way to look at the association between obesity and chronic conditions is to consider the likelihood or risk of having the condition in people that are obese even after accounting for differences between age and sex. Table 2 shows the risk of selected chronic conditions by BMI category. The ideal BMI was used as the reference. Obese Utahns are significantly more likely to have arthritis when compared to those classified as ideal BMI. The risk increases in those that are in the higher obesity classes. Arthritis, asthma, diabetes, and high blood pressure also showed a similar relationship within the obesity classes when compared to those classified as overweight. For example, an individual classified as Class III obese is 4.6 times more likely to have arthritis, 3.6 times more likely to have asthma, 19.5 times more likely to have diabetes, 11.0 times more likely to have high blood pressure, and 2.4 times more likely to have high cholesterol when compared to an individual classified as ideal BMI.

Since the risk of having a chronic condition increases as a person moves from one weight class to a higher class, it is important for overweight or obese people to at least maintain their weight if not lose weight. Weight loss can help control chronic conditions worsened by obesity and may also reduce the likelihood of developing multiple diseases. Studies have shown that weight loss benefits the obese person in many ways. It lowers high blood pressure, lowers high cholesterol, lowers low-density lipoprotein cholesterol (LDL) and triglycerides in those with dyslipidemia, and lowers high blood glucose levels in persons with type 2 diabetes.<sup>2</sup> Symptoms of arthritis have been improved with weight loss.<sup>1</sup>

In 1998 the National Institutes of Health (NIH) published clinical guidelines on the identification, evaluation, and treatment of overweight and obesity. The document reviews the evidence base for the association between overweight and obesity and chronic conditions and suggests early identification of chronic conditions in overweight and obese individuals. Decreasing BMI through increased physical activity and improved nutrition is suggested.<sup>2</sup> Tools for health care providers that include a variety of therapies are detailed in the guidelines.

## BMI Categories

Table 1. Table of BMI categories for the average man and woman in Utah

	Ideal	Overweight	Obese		
			Class I	Class II	Class III
BMI	18.5–24.9	25.0–29.9	30.0–34.9	35.0–39.9	40+
Avg Woman 5'5"	114–149 lbs	150–179 lbs	180–209 lbs	210–239 lbs	240+ lbs
Avg Man 5'10"	136–178 lbs	179–214 lbs	215–249 lbs	250–285 lbs	286+ lbs

Body Mass Index (BMI) calculated based on height and weight. Height of average man and woman calculated using the 2008 Utah BRFSS data.

## Chronic Condition Risk

Table 2. Chronic condition risk by BMI category, Utah adults

Disease	Odds Ratio by BMI Category				
	Ideal	Overweight	Obese Class I	Obese Class II	Obese Class III
	<25	25–29	30–34	35–39	40+
Arthritis	1.00	1.2*	2.0**	2.8**	4.6**
Asthma	1.00	1.2	2.1**	1.8*	3.6**
Diabetes	1.00	1.7*	3.9**	6.6**	19.5**
High Blood Pressure	1.00	2.1*	4.6**	6.1**	11.0**
High Cholesterol	1.00	1.7*	2.4**	2.7**	2.4*

Odds ratios calculated using 2005 and 2007 Utah BRFSS data combined. Logistic models adjusted for age and sex. \*significantly different from ideal weight; \*\*significantly different from ideal and overweight

## References

1. DHHS, The Surgeon General's call to action to prevent and decrease overweight and obesity. Washington, DC: US Government Printing Office, 2001:16.
2. NIH, Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults, the evidence report. NIH Publication No. 98-4083, September 1998, National Heart, Lung, and Blood Institute in cooperation with the National Institute of Diabetes and Digestive and Kidney Diseases. September 1998. Available at [http://www.nhlbi.nih.gov/guidelines/obesity/ob\\_gdlns.pdf](http://www.nhlbi.nih.gov/guidelines/obesity/ob_gdlns.pdf).

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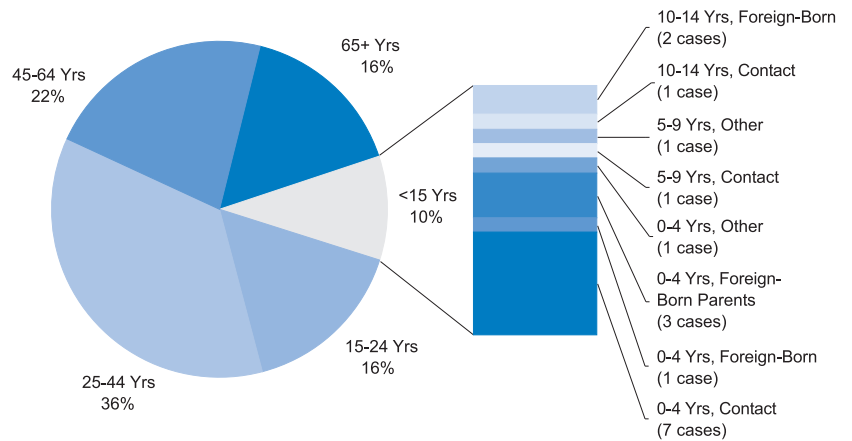
## Breaking News, April 2010

### Importance of Tuberculosis Contact and Source Case Investigations

Contact investigations are the second most important activity in tuberculosis (TB) control, following the evaluation and treatment of cases of active TB disease. In 2009, a cluster of five TB cases occurred in northern Utah. The initial case of this cluster was a pediatric case, the source case investigation of which identified the adult TB case to whom the child was exposed. The contact investigation of the adult case led to the finding of two additional TB cases in children less than 5 years of age, and a fourth pediatric case that was genotypically linked to the adult case was later identified.

From 2005 to 2009, ten percent of Utah's TB morbidity was pediatric cases less than 15 years of age. Forty-one percent (7 of 17) of the pediatric cases – all less than five years of age – were diagnosed with active TB disease during a contact investigation. An additional pediatric case, aged 10–14 years, had been identified as a contact in 2005 but did not complete treatment for latent TB infection. This illustrates the importance of initiating contact and source case investigations in a timely manner and ensuring that contacts start and complete treatment for their latent TB infection.

**Tuberculosis Cases by Age Group, Utah, 2005–2009**



## Community Health Indicators Spotlight, April 2010

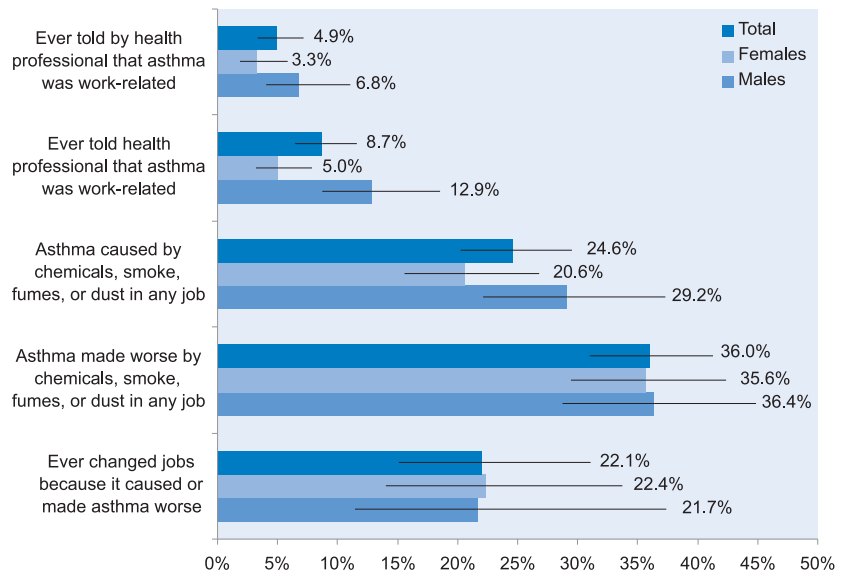
### Occupational Asthma

Work-Related Asthma (WRA) is asthma that is caused or triggered by conditions or substances in the workplace. There are two main types of WRA: 1) pre-existing asthma that is triggered or made worse by exposure to one or more substances in the work environment, and 2) asthma that is caused by exposure to substances in the work environment.<sup>1</sup> Some occupations where employees are at high risk for developing work-related asthma include: animal handlers, farmers, bakers, food processors, and health care workers.<sup>2</sup>

The prevalence of work-related asthma in Utah was assessed by asking the adult working population who had ever been diagnosed with asthma if their asthma was caused or worsened by their current or previous job. Overall, 4.9% of respondents said that a health professional had told them their asthma was work-related, and 8.7% said they had told a health professional their asthma was work-related. Over one-fifth of adults with lifetime asthma (22.1%) reported having ever changed jobs because it caused or made their asthma worse.

The Utah Asthma Program has developed educational materials for high-risk groups including miners and Future Farmers of America, and continues to work with various occupations to decrease the prevalence of work-related asthma in Utah.

**Prevalence of Work-Related Asthma Among Adults With Lifetime Asthma, Utah, 2007–2008**



Source: Utah Behavioral Risk Factor Surveillance System Adult Call-back Survey, 2007–2008 Combined. Crude prevalence.

### References

1. Milet M, Tran S, Eatherton M, Flattery J, Kreutzer R. "The Burden of Asthma in California: A Surveillance Report." Richmond, CA: California Department of Health Services, Environmental Health Investigations Branch, June 2007.
2. American Lung Association, Occupational Asthma. [http://www.lungusa.org/site/c.dvLUK9O0E/b.23034/k.B4D1/Occupational\\_Asthma.htm](http://www.lungusa.org/site/c.dvLUK9O0E/b.23034/k.B4D1/Occupational_Asthma.htm). Accessed September 29, 2009.

# Monthly Health Indicators Report

(Data Through March 2010)

<b>Monthly Report of Notifiable Diseases, March 2010</b>	Current Month # Cases	Current Month # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
Campylobacteriosis (Campylobacter)	16	24	47	48	1.0
Shiga toxin-producing Escherichia coli (E. coli)	0	3	0	7	0.0
Hepatitis A (infectious hepatitis)	0	2	3	4	0.7
Hepatitis B, acute infections (serum hepatitis)	0	1	0	4	0.0
Influenza†	Weekly updates at <a href="http://health.utah.gov/cpi/diseases/flu">http://health.utah.gov/cpi/diseases/flu</a>				
Measles (Rubeola, Hard Measles)	0	0	0	0	--
Meningococcal Disease	0	0	1	2	0.4
Norovirus	1	0	5	6	0.8
Pertussis (Whooping Cough)	22	40	97	110	0.9
Salmonellosis (Salmonella)	24	18	68	43	1.6
Shigellosis (Shigella)	4	2	7	7	1.1
Varicella (Chickenpox)	74	86	208	250	0.8
Viral and Aseptic Meningitis	0	3	0	6	0.0

<b>Notifiable Diseases Reported Quarterly, 1st Qtr 2010</b>	Current Quarter # Cases	Current Quarter # Expected Cases (5-yr average)	# Cases YTD	# Expected YTD (5-yr average)	YTD Standard Morbidity Ratio (obs/exp)
HIV	27	17	27	94	0.3
AIDS	12	14	12	42	0.3
Chlamydia	1,591	1,370	1,591	1,370	1.2
Gonorrhea	70	170	70	170	0.4
Tuberculosis	4	8	4	8	0.5

<b>Program Enrollment for the Month of March 2010</b>	Current Month	Previous Month	% Change <sup>s</sup> From Previous Month	1 Year Ago	% Change <sup>s</sup> From 1 Year Ago
Medicaid	213,145	209,630	+1.7%	186,090	+14.5%
PCN (Primary Care Network)	17,184	17,527	-2.0%	14,725	+16.7%
CHIP (Children's Health Ins. Plan)	41,845	41,003	+2.1%	38,458	+8.8%

<b>Medicaid Expenditures (in Millions) for the Month of March 2010</b>	Current Month	Expected/Budgeted for Month*	Fiscal YTD	Budgeted Fiscal YTD	Variance - over (under) budget
Capitated Mental Health	\$ 13.4	\$ 9.9	\$ 84.8	\$ 85.6	\$ (0.8)
Inpatient Hospital	\$ 26.4	\$ 17.9	\$ 182.6	\$ 154.4	\$ 28.2
Outpatient Hospital	\$ 9.5	\$ 9.0	\$ 83.1	\$ 77.3	\$ 5.8
Long Term Care	\$ 14.0	\$ 13.0	\$ 122.1	\$ 119.4	\$ 2.6
Pharmacy <sup>β</sup>	\$ 12.4	\$ 10.5	\$ 112.0	\$ 90.4	\$ 21.6
Physician/Osteo Services <sup>‡</sup>	\$ 8.1	\$ 6.3	\$ 62.3	\$ 54.5	\$ 7.8
<b>TOTAL HCF MEDICAID</b>	<b>\$ 134.1</b>	<b>\$ 133.5</b>	<b>\$ 1,174.0</b>	<b>\$ 1,177.9</b>	<b>\$ (3.9)</b>

<b>Health Care System Measures</b>	Number of Events	Rate per 100 Population	% Change <sup>s</sup> From Previous Year	Total Charges in Millions	% Change <sup>s</sup> From Previous Year
Overall Hospitalizations (2008)	279,504	9.4%	-2.7%	\$ 4,703.3	+10.3%
Non-maternity Hospitalizations (2008)	164,602	5.4%	-3.0%	\$ 3,924.7	+10.4%
Emergency Department Encounters (2008)	681,958	23.4%	-2.9%	\$ 879.5	+12.6%
Outpatient Surgery (2007)	296,596	10.5%	-5.7%	\$ 1,109.0	+8.6%

<b>Annual Community Health Measures</b>	Current Data Year	Population at Risk	Number Affected	Percent/Rate	% Change <sup>s</sup> From Previous Year
Overweight and Obesity (Adults 18+)	2009	1,939,721	1,125,900	58.0%	-0.2%
Cigarette Smoking (Adults 18+)	2009	1,939,721	188,600	9.7%	+4.4%
Influenza Immunization (Adults 65+)	2009	253,594	175,600	69.2%	-5.5%
Health Insurance Coverage (Uninsured)	2008	2,781,954	298,200	10.7%	+0.7%
Motor Vehicle Crash Injury Deaths	2008	2,781,954	268	9.6 / 100,000	-3.3%
Suicide Deaths	2008	2,781,954	384	13.8 / 100,000	+1.3%
Diabetes Prevalence (Adults 18+)	2009	1,939,721	123,200	6.3%	+4.1%
Coronary Heart Disease Deaths	2008	2,781,954	1,514	54.4 / 100,000	-4.0%
All Cancer Deaths	2008	2,781,954	2,478	89.1 / 100,000	-5.6%
Births to Adolescents (Ages 15-17)	2008	61,727	1,122	18.2 / 1,000	-2.0%
Early Prenatal Care	2008	55,605	43,997	79.1%	-0.4%
Infant Mortality	2008	55,605	264	4.7 / 1,000	-7.9%
Childhood Immunization (4:3:1:3:3:1)	2009	55,120	42,200	76.6%	+4.1%

† There is currently little influenza activity in Utah. Influenza-like illness activity is below baseline statewide. As of April 14, 2010, 900 influenza-associated hospitalizations have been reported to the UDOH. More information can be found at <http://health.utah.gov/epi/diseases/flu>.

\* % Change could be due to random variation.

‡ The Medicaid program service budget numbers by month are not available at this time.

β The Pharmacy Expenditure and Budget amount only includes the gross pharmacy costs. The Pharmacy Rebate and Pharmacy Part-D amounts are excluded from this line item.

‡ Medicaid payments reported under Physician/Osteo Services do not include enhanced physician payments.

Notes: Data for notifiable diseases are preliminary and subject to change upon the completion of ongoing disease investigations. Active surveillance for West Nile virus has ended until the 2010 season.