



# The Prevalence of Food Insecurity Is Highest Among Americans for Whom Diet Is Most Critical to Health

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Diabetes is one of the most prevalent and costly health conditions in the U.S. (1), and diet plays a fundamental role in managing the condition effectively. Yet prior research raises concerns about the “food security” of people with diabetes (i.e., whether they have access to healthy, affordable food) (2,3). It is unknown, however, how widespread food insecurity is among people with diabetes across different insurance types and, moreover, whether food assistance is adequately addressing the problem (4). This study helps to fill this gap by providing national estimates of the prevalence of food insecurity among Americans with diabetes by insurance status and receipt of Supplemental Nutrition Assistance Program (SNAP) benefits.

We used a new source of data on food security from the Medical Expenditure Panel Survey (MEPS), a nationally representative survey sponsored by the Agency for Healthcare Research and Quality. In 2016 and 2017, the MEPS included an interview module designed to assess food security based on a validated instrument developed by the U.S. Department of Agriculture (5). These data, together with data from the MEPS questionnaire on diabetes care, provide a unique resource for investigating the nexus between food insecurity and diabetes. We restrict our sample to adults ages 18–64 years ( $N = 38,774$ ).

Our analysis estimated the prevalence of food insecurity (percent who were food insecure) across four groups: those without diabetes, those with diabetes overall, those with insulin-dependent diabetes, and those with diabetes-related eye or kidney problems. Percentages are reported across insurance categories (private coverage all year, Medicaid all year, uninsured all year, or some combination of coverage types) and by receipt of SNAP benefits. The differences discussed were all statistically significant at  $P < 0.01$ . All estimates and SEs were adjusted for the complex survey design of MEPS and are, therefore, representative of the U.S. noninstitutionalized population.

Results show that the prevalence of food insecurity was much higher among adults with diabetes compared with those without diabetes (16% vs. 9%) (Table 1). People with diabetes who were taking insulin or who had eye or kidney complications had even higher rates of food insecurity at 19% and 22%, respectively. The prevalence of food insecurity among people with diabetes was much higher among Medicaid enrollees compared with those with other types of insurance. Nearly one-third (32%) of Medicaid enrollees with diabetes were food insecure, 24 percentage points higher than their counterparts with private insurance (7%). The prevalence of food insecurity was highest among

Medicaid enrollees with insulin-dependent diabetes; 44% were food insecure, over six times higher than their counterparts with private insurance.

We also found that a sizable fraction of people with diabetes who were food insecure were not receiving SNAP benefits. Over 80% of people with diabetes who had private insurance coverage were not receiving SNAP benefits, likely reflecting SNAP eligibility (individuals who do not qualify for Medicaid are typically not eligible for SNAP). However, even among Medicaid enrollees, 29% of people with diabetes were not receiving SNAP benefits, and over two-thirds (68%) of the uninsured were not receiving SNAP benefits. Even among Medicaid enrollees with diabetes who were receiving SNAP benefits, food insecurity persisted; despite receiving food assistance, over 40% remained food insecure.

These findings show that the prevalence of food insecurity in the U.S. is highest among Americans for whom a healthy diet is especially critical—Medicaid enrollees with insulin-dependent diabetes and diabetes-related eye or kidney complications (over 40% were food insecure). The problem of co-occurring food insecurity and diabetes among the nation’s disadvantaged has likely worsened during the coronavirus disease 2019 pandemic. Our findings are especially revealing when considered together with statistics on national

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**Table 1—Sample size, population, and prevalence of food insecurity by diabetes status, insurance status, and receipt of nutrition assistance**

	Overall	Private only all year	Medicaid only all year	Uninsured all year	Mixed coverage
<b>Overall</b>					
<i>N</i>	38,774	20,382	5,152	6,008	7,232
Population	194,454,784	124,587,675	17,351,435	20,720,503	31,795,171
% Food insecure	9	4	22	17	18
95% CI	(9, 10)	(4, 5)	(20, 24)	(15, 19)	(16, 19)
<b>People without diabetes</b>					
<i>N</i>	35,230	18,906	4,539	5,540	6,245
Population	179,541,451	116,572,572	15,561,507	19,421,885	27,985,486
% Food insecure	9	4	21	17	17
95% CI	(8, 9)	(4, 4)	(19, 23)	(15, 19)	(15, 18)
<b>People with diabetes</b>					
<i>N</i>	3,199	1,358	526	369	946
Population	13,907,360	7,503,389	1,533,782	1,154,431	3,715,758
% Food insecure	16	7	32	21	26
95% CI	(14, 18)	(6, 9)	(26, 37)	(15, 26)	(22, 30)
<b>People with diabetes who take insulin</b>					
<i>N</i>	773	320	132	65	256
Population	3,316,659	1,725,391	384,691	217,429	989,147
% Food insecure	19	7	44	23	29
95% CI	(15, 23)	(4, 10)	(34, 55)	(11, 34)	(22, 36)
<b>People with diabetes with eye or kidney problems</b>					
<i>N</i>	551	175	101	45	230
Population	2,163,697	872,130	275,802	NA	851,895
% Food insecure	22	10	41	NA	28
95% CI	(18, 26)	(5, 14)	(28, 54)	NA	(21, 35)
<b>Food-insecure people with diabetes</b>					
<i>N</i>	633	131	162	83	257
Population	2,210,136	534,913	483,166	237,734	954,324
% Not receiving food assistance	57	80	29	68	56
95% CI	(53, 62)	(70, 90)	(19, 39)	(53, 83)	(47, 65)
<b>People with diabetes receiving food assistance</b>					
<i>N</i>	791	78	300	95	318
Population	2,692,938	327,473	826,313	328,048	1,211,104
% Food insecure	35	33	42	23	35
95% CI	(31, 40)	(18, 47)	(34, 49)	(11, 35)	(27, 43)

NA, not available.

health care expenditures. Twenty seven million Americans, 8% of the total U.S. population, have diabetes, resulting in an estimated \$329 billion in direct and indirect costs in 2017 (1). Medicaid alone spent about \$34 billion on medical care for nonelderly adults with diabetes. Given the prevalence of food insecurity documented in this study, many people with diabetes who rely on Medicaid coverage or who go without coverage entirely likely find it difficult or impossible to manage their condition effectively. While this situation is dire, it also constitutes an opportunity to develop programs and policies that could simultaneously improve health and save money in an increasingly strapped public health insurance system. To take advantage of this opportunity, more research is needed to identify the most

effective ways of improving and supporting food security among people with diabetes.

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