



# The monetary impact of grocery tax in Alabama on fruit and vegetable purchases in a variety of demographics

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# Study Purpose

- The purpose of this research was to determine the tax cost of meeting the USDA recommended intake of F/V for all demographics in the state of Alabama in order to determine if tax cost on these goods could be prohibitive to consuming adequate servings





# Obesity & F/V consumption

- Approximately 30% of US adults obese
  - Alabama - 32.2% of adults obese
- In Alabama
  - <30% consume recommended F/V servings
  - >30% are obese
  - \$0.04 sales tax on F/V and other goods
- F/V inverse relationship to chronic disease (dz)
- High cost listed as barrier to F/V consumption



# Obesity Costs

- Medical costs of obesity estimated at \$147 billion, 2009
- Association with chronic disease
- Social costs
- Low socioeconomic status (SES)/minority status positively associated with obesity
- Low cost of energy dense foods
  - Positive relationship between nutrient density & cost
  - Inverse relationship between energy & cost



# F/V Costs

- Most common barrier to adequate F/V consumption – cost
- Price increase
  - 2004 - 3 fruits/4 vegetables = \$0.64
  - 2009 - 2 cups fruit/2.5 cups vegetables = \$2.50
- F/V higher cost/calorie than all other groups
- \$0.12 of each food dollar spent on F/V
- Household income increases, increased F/V spending but not as much as other foods



# Current Taxation

- Current AL tax at 4% on goods and groceries
- AL and Mississippi only remaining states taxing groceries with no subsidies or cuts
- Low SES associated with low F/V intake
- Engle's Law
  - As income decreases, the portion of household income spent on food increases

# Tool Development

- USDA Economic Research Service data sets & regional foods
- Consideration of non-fresh alternatives
- Price per pound/price per item
- State divided into 11 public health regions by AL Department of Public Health
- Highest poverty and lowest poverty counties chosen
  - Food deserts - areas where healthy and affordable food options are difficult to locate
  - Both urban and rural
- Stores: n=43, Wal-Mart: n=16
- **Data collected by Alabama Obesity Taskforce**

# Results 1

- Estimated average cost per serving of fruits and vegetables in Alabama
- Average cost for individual F/V computed
- Overall average cost/cup computed

$$\frac{\text{Price per serving of each fruit (vegetable)} \times \text{average price per serving}}{\text{Number of fruits (vegetables) included}}$$

- Fruits \$0.69
- Vegetables \$0.68



## Results 2

- Potential tax on adequate fruit and vegetable purchases, individual
- Calculated for all USDA age/gender groups
- Applied \$0.04 tax to amounts computed in research question 1

# Results 2, continued

**Table 4.3: Daily cost, daily tax cost, and yearly tax cost of consuming the recommended servings of fruits and vegetables for male individuals in Alabama, 2011**

Age (years)	Fruit Servings	Cost of Fruit Servings	Vegetable Servings	Cost of Vegetable Servings	Total Daily Cost	Daily Tax Cost	Yearly Tax Cost
2	1	\$0.69	1	\$0.68	\$1.37	\$0.0548	\$20.00
3-5	1.5	\$1.04	1.5	\$1.02	\$2.06	\$0.0824	\$30.08
6-8	1.5	\$1.04	2	\$1.36	\$2.40	\$0.096	\$35.04
9-10	1.5	\$1.04	2.5	\$1.70	\$2.74	\$0.1096	\$40.00
11	2	\$1.38	2.5	\$1.70	\$3.08	\$0.1232	\$44.97
12-13	2	\$1.38	3	\$2.04	\$3.42	\$0.1368	\$49.93
14	2	\$1.38	3	\$2.04	\$3.42	\$0.1368	\$49.93
15	2	\$1.38	3.5	\$2.38	\$3.76	\$0.1504	\$54.90
16-25	2.5	\$1.73	3.5	\$2.38	\$4.11	\$0.1644	\$60.01
26-45	2	\$1.38	3.5	\$2.38	\$3.76	\$0.1504	\$54.90
46-65	2	\$1.38	3	\$2.04	\$3.42	\$0.1368	\$49.93
66+	2	\$1.38	3	\$2.04	\$3.42	\$0.1368	\$49.93

# Results 3

- Total potential state tax revenue for adequate fruit and vegetable purchases
- 2010 US Census Bureau statistics
- Annual tax cost x number of individuals in age/gender group = total tax revenue for group
- Total \$215,494,732.16
  - Portion of reported \$1,842,049,663.04 generated by Alabama sales tax in the 2009-1010 fiscal year

# Results 3, continued

**Table 4.6 Projected annual tax revenue generated if all females were to consume the recommended one-cup equivalent servings of fruits and vegetables daily**

Age (years)	Number of Individuals	Tax Cost Per Year	Population cost
2	30,676	\$20.00	\$613,520.00
3	30271	\$24.97	\$755,866.87
4 to 6	89109	\$30.08	\$2,680,398.72
7 to 9	91689	\$35.04	\$3,212,782.56
10 to 11	63143	\$40.00	\$2,525,720.00
12 to 18	224634	\$44.97	\$10,101,790.98
19-25	236323	\$49.93	\$11,799,607.39
26-50	806516	\$44.97	\$36,269,024.52
>51	828351	\$40.00	\$33,134,040.00
<b>Total</b>			<b>\$101,092,751.04</b>

# Results 4

- Potential number of servings of fruit and vegetables purchased with sales tax

Annual tax cost per year = number of servings

Cost per serving F (V)

- Differs by group
  - Highest were males 16-25
  - 87 fruit or 88 vegetable servings
- Money may not be spent on extra servings



# Discussion

- Cost increase from 2008, \$2.50 (\$2.63 after adjustment for inflation) to \$3.08
- Household setting
  - Four person household, \$179.88
  - On average, 0.45% of median household income
  - Higher percentage for low income
  - Dependents supported by earners
    - Children, older adults, disabled
- Additional county taxes



# Discussion

- AL residents endure added charge in form of sales tax that increases cost of F/V – barrier
- Money spent on tax could be spent on extra servings
- Behavior difficult to predict, low income/price elasticity
- Potential reduction in chronic dz/cost of obesity
- Potential \$215,494,732.16 in state revenue
- In AL, 850,000 receive monthly Medicaid reimbursements of approximately \$3000
  - State contributes roughly 1.4 billion annually



# Opportunities

- AL is in a unique position to determine if targeted reductions in cost (tax) of F/V could increase consumption
- Low price elasticity of demand, income elasticity of demand
- FREE! Study
  - Lindt Truffle (\$.40) – consumed by 40%; Hershey Kiss (\$.01) – consumed by 40%
  - Prices dropped \$.01 – 90% consumed Hershey Kiss





Thank you

Questions, Comments?

