

Oral Water Intake Across Major US Industries: NHANES 1999-2004

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INTRODUCTION

Physically demanding jobs can be associated with substantial water loss. Therefore there must be an emphasis on fluid replacement strategies to protect worker health and to maintain work capacity.

OBJECTIVE

Examine water intake variation across occupational groups by major United States Industries.

METHODS

Data from 1999-2004 National Health and Nutrition Examination Survey (NHANES).

Respondents > 20 years who reported on their & industry .

Water consumption from bottled, tap and fountain attained from food frequency questionnaire.

Workers grouped into 45 major US industries.

Table 1. Mean Oral Water Intake among 1999-2004 National Health and Nutrition Examination Survey (NHANES) participants by major U.S. Occupations.

Industry	Mean (Liters/day)	95% Confidence Interval
Manufacturing - Textile mill products	1.0	0.5-1.5
Private households	1.0	0.8-1.2
Manufacturing - Rubber, plastics, and leather products	1.0	0.6-1.5
Retail-Department stores	1.0	0.9-1.2
Repair services	1.0	0.7-1.4
Trucking service	1.1	0.8-1.4
Manufacturing - Electrical machinery, equipment, and supplies	1.1	0.8-1.4
Other Retail trade	1.1	0.9-1.3
Health services, n. e. c.	1.1	1.0-1.2
Retail-Vehicle dealers, supply and service stores	1.1	1.0-1.3
Retail-Apparel and accessory stores	1.2	0.9-1.4
Manufacturing - Machinery, except electrical	1.2	1.0-1.4
Manufacturing - Lumber and wood products, including furniture	1.2	0.9-1.5
Manufacturing - Food and kindred products	1.2	0.9-1.5
Wholesale Trade, Durable goods	1.2	1.0-1.4
Banking and other finance	1.2	1.1-1.4
Manufacturing - Miscellaneous and not specified manufacturing industries	1.2	0.9-1.5
Manufacturing - Apparel and other finished textile products	1.2	0.8-1.7
Manufacturing - Metal industries	1.2	1.0-1.5
Transportation, except trucking	1.2	1.1-1.4
Retail-Food stores	1.2	1.1-1.4
Manufacturing - Paper products, printing, publishing, and allied industries	1.3	1.0-1.5
Personal services, except private households and lodging	1.3	1.0-1.5
Public administration, except justice, public order, safety	1.3	1.0-1.5
Educational services	1.3	1.2-1.4
Retail-Eating and drinking places	1.3	1.2-1.4
Hospitals	1.3	1.2-1.4
Other professional and related services	1.3	1.1-1.5
Lodging places	1.3	1.0-1.6
Offices of health practitioners	1.3	1.1-1.5
Social services	1.3	1.1-1.6
Communications	1.3	1.1-1.6
Manufacturing - Chemicals, petroleum, and coal products	1.3	0.9-1.8
Entertainment and recreation services	1.4	1.2-1.6
Manufacturing - Transportation equipment	1.4	1.1-1.6
Wholesale Trade, Non-durable and not specified goods	1.4	1.0-1.8
Construction	1.4	1.2-1.6
Business services	1.4	1.2-1.6
Insurance and real estate	1.4	1.3-1.6
Mining	1.4	0.9-1.9
Utilities	1.5	1.1-1.8
Agriculture production	1.7	1.1-2.2
Justice, public order, and safety	1.7	1.3-2.1
Agricultural services, forestry, and fishing	1.7	1.3-2.1
Military & national security	1.7	1.2-2.3



Table 2. Mean Oral Water Intake among 1999-2004 National Health and Nutrition Examination Survey (NHANES) participants by Krieger Job Categories and Gender.

Sample n	Mean (Liters/day)	95% Confidence Interval	
Total Occupations			
White Collar Part Time Workers	1.58	1.2	1.0-1.5
Service Workers Full Time	1,141	1.2	1.1-1.3
Farm Workers Part Time	239	1.2	1.1-1.4
White Collar Full Time Workers	2,209	1.3	1.2-1.5
Service Workers Part Time	146	1.3	0.9-1.7
Farm Workers Full Time	864	1.3	1.1-1.4
Blue Collar Workers Part Time	626	1.3	1.2-1.5
Blue Collar Workers Full Time	3,267	1.3	1.2-1.3
Male Occupations			
White Collar Part Time Workers	110	1.2	0.8-1.6
Service Workers Full Time	735	1.2	1.1-1.4
Farm Workers Part Time	102	1.2	0.9-1.5
Blue Collar Workers Part Time	205	1.2	1.0-1.5
White Collar Full Time Workers	1,716	1.4	1.3-1.5
Blue Collar Workers Full Time	1,357	1.4	1.3-1.4
Service Workers Part Time	68	1.5	0.8-2.2
Farm Workers Full Time	445	1.5	1.3-1.6
Female Occupations			
White Collar Full Time Workers	419	1.0	0.9-1.2
Service Workers Part Time	493	1.2	1.1-1.3
Service Workers Full Time	78	1.2	0.8-1.5
Blue Collar Workers Full Time	1,910	1.2	1.1-1.3
White Collar Part Time Workers	48	1.3	0.9-1.7
Service Workers Full Time	406	1.3	1.1-1.5
Farm Workers Part Time	137	1.3	1.0-1.6
Blue Collar Workers Part Time	421	1.4	1.2-1.5



RESULTS

Unemployed individuals consumed less water daily (males 1.2 Liters(L)/day, females 1.1 L/day) as compared to employed individuals (males 1.4 Liters (L)/day, females 1.2 L/day).

Workers employed in Textile-mill products (1.01L/day); Private households (1.02L/day); and Rubber, plastics, and leather product manufacturing (1.03L/day) industries consumed the least amount of water daily.

Individuals employed in Justice, public order, and safety (1.67/day); Agricultural services, forestry, and fishing (1.71L/day); and Military & national security consumed the most water daily (1.74/day).

CONCLUSION

National estimates of water consumption patterns across occupational groups vary slightly.

Water replacement strategies in certain occupational groups may be warranted.