

Occupational Requirements Survey

Occupational Group Profiles

2017

www.bls.gov/ors

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Architecture and Engineering Occupations

This occupational group includes architects, surveyors, cartographers, photogrammetrists, engineers, drafters, engineering technicians, electro-mechanical technicians, and mapping technicians.



Physical Requirements

The strength level for architecture and engineering jobs varies, with 23.1 percent of jobs classified as sedentary, another 24.4 percent classified as light, and almost half (45.4 percent) as medium. Most (82.4 percent) architecture and engineering jobs require reaching at or below the shoulder with both hands, and 90.1 percent require gross manipulation with both hands. On average, workers spend 68.6 percent of the workday sitting, and most workers (72.3 percent) are able to choose when they can sit versus stand.

Environmental Conditions

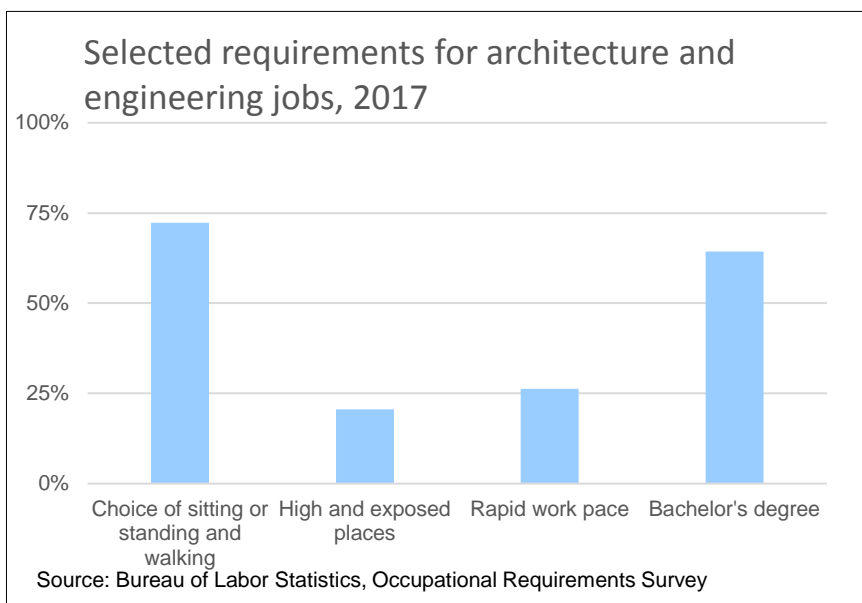
Some jobs (20.6 percent) require workers to be in high and exposed places, and 11.2 percent use personal protective equipment to mitigate risk associated with this exposure. Almost one-third (30.3 percent) of workers are in proximity to moving mechanical parts at some point in their workday. The most common noise intensity level is moderate which is experienced by 74.1 percent of workers. Another 18.1 percent of workers experience a quiet noise level, and 7.6 percent a loud noise level.

Cognitive Requirements

The work location for 53.7 percent of jobs does not change. These jobs require work review at least weekly for 34.2 of these workers. Most jobs (71.6 percent) have a varying work pace, where there are faster and slower work periods. Typically, the pace of work is steady (68.7 percent of jobs), and another 26.3 percent of jobs are performed at a rapid pace.

Educational Requirements

Most (64.3 percent) jobs require a bachelor's degree to fulfill a minimum education requirement. Most (77.8 percent) jobs also require prior work experience. On-the-job training is a requirement for 62.5 percent of jobs.



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Arts, Design, Entertainment, Sports, and Media Occupations

This occupational group includes art directors, artists, fashion designers, actors, producers, directors, coaches, dancers, choreographers, musicians, singers, radio announcers, writers, editors, interpreters, sound engineering technicians, photographers, and film editors.



Physical Requirements

Arts, design, entertainment, sports, and media workers spend an average of over half of their workday (59.0 percent) sitting. The decision of when to sit or stand is left up to workers in 56.2 percent of jobs. Gross and fine manipulation with both hands is required in 89.2 percent and 58.0 percent of jobs, respectively. Some workers (30.7 percent) are required to climb ramps or stairs as part of their job.

Environmental Conditions

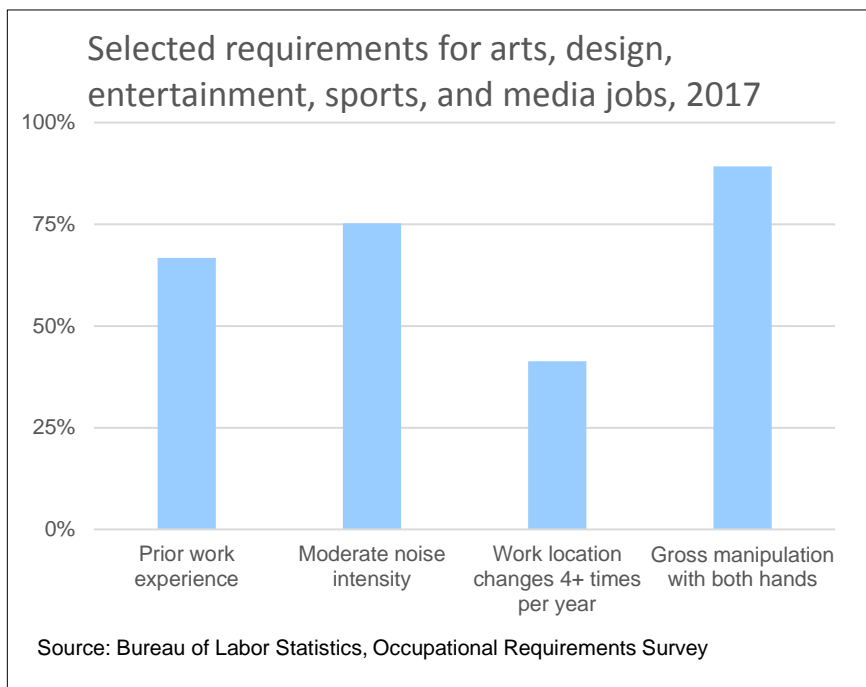
The noise level experienced is moderate for 75.2 percent of jobs, and loud for another 10.3 percent. Exposure to wetness is required for 13.6 percent of these workers. Eleven percent of jobs require workers to be in high and exposed places. Almost all jobs do not require exposure to extreme heat (98.9 percent) or cold (98.2 percent).

Cognitive Requirements

Over a quarter (27.4 percent) of workers have continuous interaction with regular contacts. For 41.3 percent of workers the work location changes more than four times per year, but for almost half (49.8 percent) there is no change in location. The work schedule changes for over half (55.5 percent) of jobs.

Educational Requirements

The most common minimum education level for these jobs is a bachelor's degree (39.7 percent). Another 29.6 percent of jobs require a high school diploma. On-the-job training is required for 66.1 percent of jobs and 66.7 percent require prior work experience.



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Building and Grounds Cleaning and Maintenance Occupations



This occupational group includes janitors, maids and housekeeping cleaners, pest control, landscaping, pesticide handlers, tree trimmers, and grounds maintenance workers.

Physical Requirements

Crouching is required for 80.8 percent of these jobs, and pushing or pulling with both hands and arms is required for 59.0 percent. These workers lift or carry an average maximum weight of about 42 pounds. Standing and walking is necessary in these jobs, and 90.4 percent do not allow the worker a choice for when they can sit versus stand. Workers in building and grounds cleaning and maintenance jobs stand or walk an average of 89.3 percent of their day.

Environmental Conditions

Exposure to wetness is a job requirement in 87.1 percent of jobs. Some (32.5 percent) jobs are exposed to hazardous contaminants, with 28.3 percent of workers using personal protective equipment to mitigate this exposure. A quiet noise intensity level is present in 18.0 percent of jobs, a moderate level in 69.6 percent, and a loud noise level in 11.2 percent.

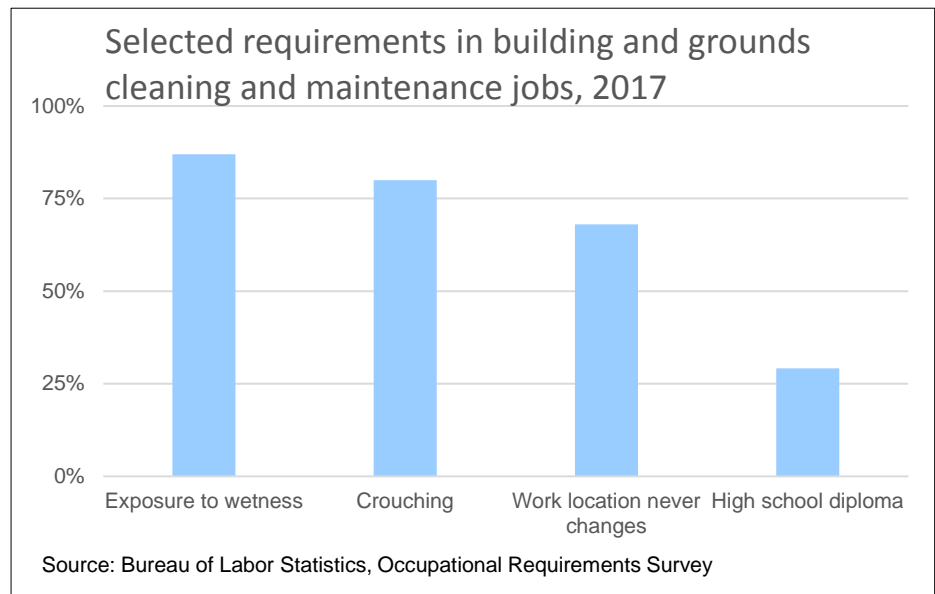
Cognitive Requirements

The work location for most (68.3 percent) jobs never changes. The pace of work is steady in 75.1 percent of jobs and rapid for another 21.2 percent. In most jobs the work tasks change less than monthly (86.0 percent). A small amount of jobs, however, require workers to adapt to changing tasks at least once per month (5.1 percent), at least once a week (4.6 percent), or at least once a day (4.3 percent).

Educational Requirements

Most (69.2 percent) jobs do not have a minimum education requirement, although about 29.2 percent required a high school diploma. On-the-job training is a requirement for 83.9 percent of jobs.

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Business and Financial Operations Occupations

This occupational group includes purchasing agents, compliance officers, human resource workers, logisticians, fundraisers, market research analysts, accountants, auditors, credit counselors, and tax examiners.



Physical Requirements

Business and financial operations workers spend an average of 80.6 percent of the day sitting. About half of jobs (49.9 percent) are classified as a sedentary strength level, with another 33.0 percent of jobs classified as a light strength level. Near visual acuity and verbal communication are required in all jobs. Gross and fine manipulation with both hands are required in 77.5 percent and 45.3 percent of jobs, respectively. Almost all jobs (99.8 percent) require the use of a traditional keyboard at some point in the workday, and the use of a 10-key pad is also required in 18.3 percent of jobs.

Environmental Conditions

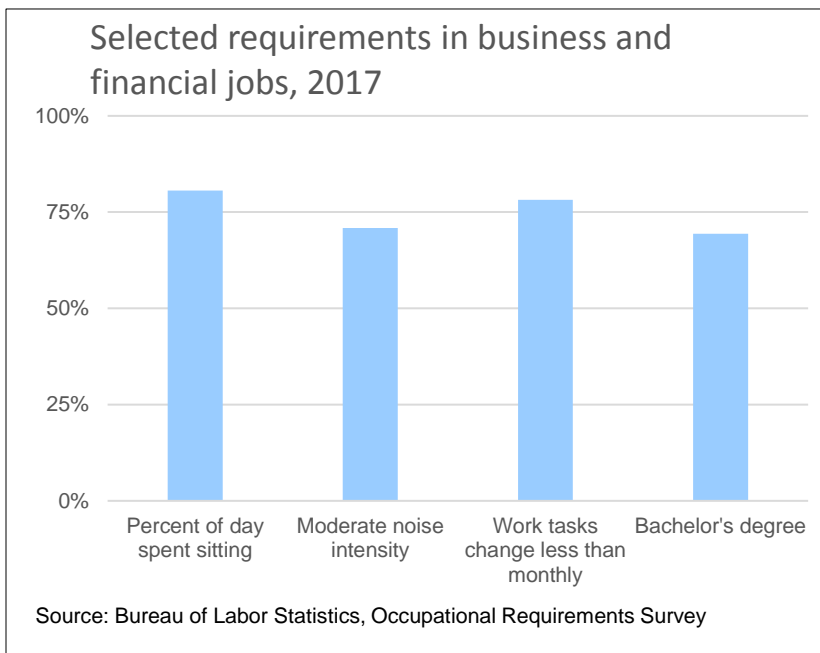
Workers experience a moderate noise intensity level in 70.9 percent of jobs and another 28.2 percent of jobs have a quiet noise intensity level. Most workers are not exposed to various environmental conditions such as heavy vibrations (99.8 percent), high and exposed places (98.6 percent), hazardous contaminants (98.4 percent), extreme heat (98.9 percent) or cold (99.1 percent), or wetness (97.1 percent).

Cognitive Requirements

The type of decision making required for workers is split between decisions that involve a degree of uncertainty or complexity (49.1 percent) or that have no set responses to choose from (44.4 percent). The schedule does not change in 62.5 percent of jobs, and work tasks change less than monthly for 78.2 percent.

Educational Requirements

Many of these jobs (68.8 percent) require a minimum education of a bachelor's degree. On-the-job training is required for 64.3 percent of jobs and 83.2 percent require prior work experience.



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Community and Social Service Occupations

This occupational group includes counselors, social workers, health educators, probation officers, correctional treatment specialists, community health workers, clergy, and directors of religious activities.



Physical Requirements

Many community and social service workers (71.6 percent) can choose when to sit or stand to perform their work, and they typically spend about 63.4 percent of their workday sitting. About three-quarters of workers (75.7 percent) reach at or below their shoulder with both hands at some point during their workday. Using a traditional keyboard is required in almost all jobs (94.8 percent), with 55.3 percent doing so occasionally, 34.7 percent frequently, and another 4.2 percent constantly.

Environmental Conditions

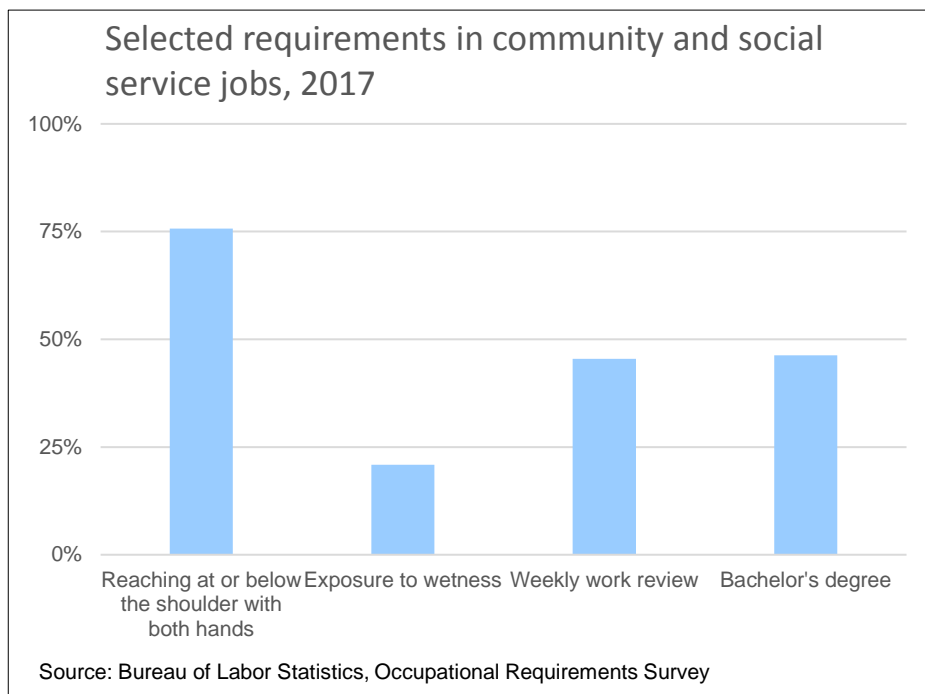
Workers are exposed to wetness in 20.9 percent of jobs, however they are only exposed occasionally (11.8 percent) or seldom (9.2 percent). A moderate noise intensity level is experienced in most jobs (78.3 percent), and another 19.2 percent experience a quiet environment.

Cognitive Requirements

Workers most commonly interact with regular contacts more than once per hour (46.9 percent), and another 27.7 percent continuously interact with regular contacts. Almost half of jobs (45.5 percent) require work to be reviewed at least weekly, 17.1 percent require review once per day, and another 4.9 percent require more than once a day.

Educational Requirements

A minimum education requirement of a bachelor's degree is the most common requirement for 46.3 percent of workers. A high school diploma is required for an additional 19.7 percent of workers. On-the-job training is a requirement for 64.6 percent of jobs.



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Computer and Mathematical Occupations

This occupational group includes computer and information analysts, software developers and programmers, database and systems administrators, computer support specialists, actuaries, mathematicians, statisticians, operations research analysts, and mathematical technicians.



Physical Requirements

On average, workers in computer and mathematical occupations spend 83.5 percent of the workday sitting. These jobs require lifting or carrying an average maximum weight of about 17 pounds. Reaching at or below the shoulder with both hands is required in 61.0 percent of jobs. Traditional keyboarding is required in all jobs. Some jobs require crouching (26.8 percent) and kneeling (22.2 percent), while fewer require crawling (8.4 percent).

Environmental Conditions

A moderate noise intensity level was the most common (69.1 percent) noise exposure for these jobs, and another 30.5 percent of workers experience a quiet noise intensity level.

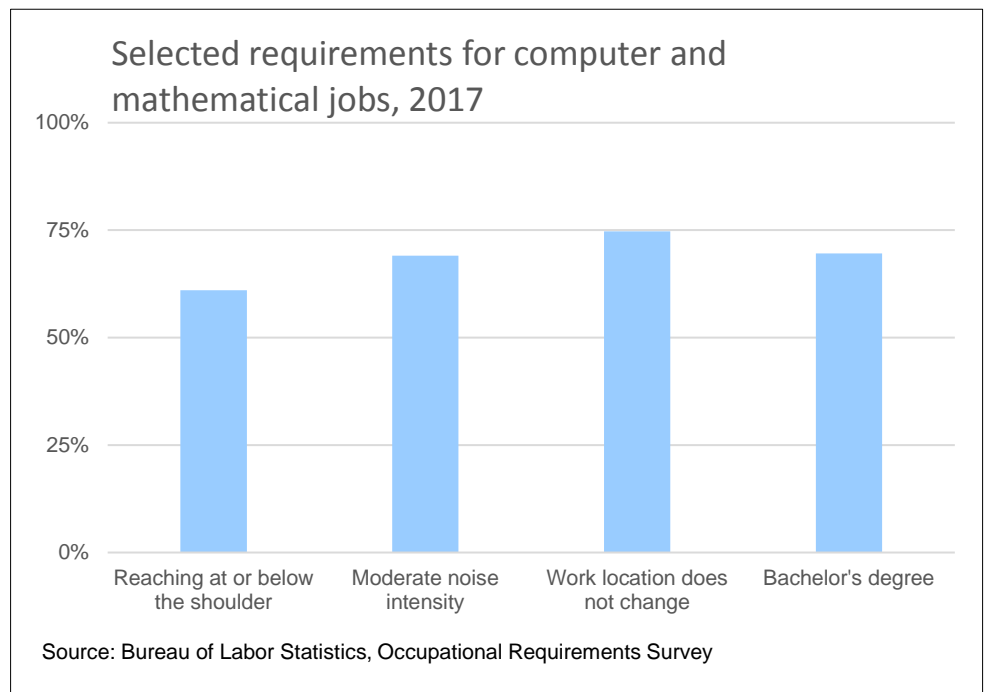
One hundred percent of these jobs do not expose workers to heavy vibrations or humidity. Most workers are not exposed to various other environmental conditions such as hazardous contaminants (99.3 percent), wetness (99.0 percent), moving mechanical parts (99.2 percent), or extreme heat (99.8 percent).

Cognitive Requirements

Typically, the work location does not change for 74.7 percent of jobs. For the remainder of jobs the location can change up to four times per year for 9.2 percent and more than that for 16.1 percent. The type of decision making required for most workers (64.7 percent) involves a degree of uncertainty or complexity, with another 32.7 percent having no set responses to choose from when making decisions.

Educational Requirements

The minimum education required for 69.6 percent of jobs is a bachelor's degree. For 88.7 percent of jobs, prior work experience is required with the average amount being about 4 years (1,499 days).



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Construction and Extraction Occupations

This occupational group includes carpenters, laborers, equipment operators, electricians, roofers, elevator installers and repairers, earth drillers, mining machine operators, and carpet, floor, and tile installers and finishers.



Physical Requirements

The most common strength level for construction and extraction jobs is a heavy strength level for 45.3 percent, and another 10.4 percent are considered to have a very heavy level. These jobs require lifting or carrying an average maximum weight of about 65 pounds. Workers spend 83.8 percent of their day standing or walking and most workers (85.8 percent) do not have the choice between sitting or standing and walking. All jobs require gross manipulation, with 10.9 percent requiring it occasionally, 32.9 percent frequently, and 55.6 percent constantly.

Environmental Conditions

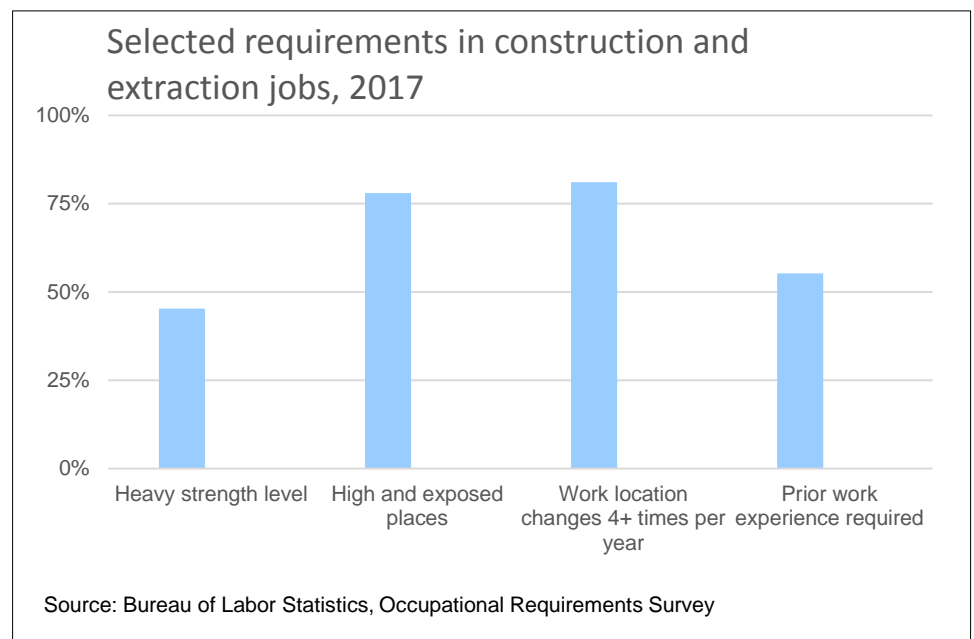
Seventy-eight percent of jobs require workers to be in high exposed places, 75.3 percent require workers to be in proximity to moving mechanical parts, and 41.3 percent expose workers to heavy vibrations. Fifty percent of jobs are performed in environments with a loud noise intensity level and another 5.6 percent are exposed to a very loud noise level.

Cognitive Requirements

The work location changes more than four times per year for 81.1 percent of jobs. Workers have their work reviewed more than once a day in 48.4 percent of jobs, and once a day in another 32.5 percent.

Educational Requirements

Half of jobs (50.0 percent) jobs do not have a minimum education requirement. Of jobs without a minimum education requirement, 40.1 percent require literacy and 9.9 percent do not. A high school diploma is required in 47.0 percent of jobs. Prior work experience is a requirement for 55.3 percent of jobs with an average length of over two and a half years (1,029 days).



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Education, Training, and Library Occupations

This occupational group includes postsecondary teachers, preschool teachers, primary school teachers, middle school teachers, self-enrichment education teachers, special education school teachers, librarians, curators, archivists, home management advisors, instructional coordinators, and teacher assistants.



Physical Requirements

Most (92.0 percent) workers use a traditional keyboard at the workplace. Communicating verbally occurs constantly for 58.7 percent of workers, frequently for 38.9 percent, and occasionally for 1.9 percent of workers. On average workers spend 35.4 percent of the workday sitting and 64.6 percent of the workday standing or walking.

Environmental Conditions

Most (89.3 percent) workers experience a moderate noise intensity level, 6.9 percent a quiet intensity level, and 3.8 percent experience a loud intensity level. Exposure to the

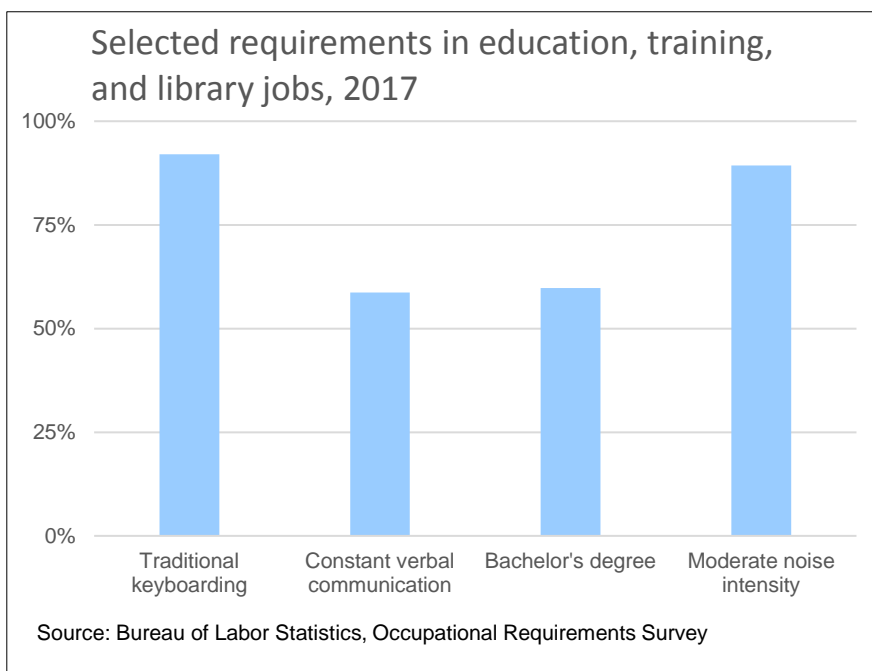
outdoors is present for 65.9 percent of workers. There are several environmental conditions for which these workers are not exposed to such as hazardous contaminants (97.0 percent), extreme heat (98.5 percent), humidity (99.6 percent), heavy vibrations (99.5 percent), exposed high places (98.5 percent), and proximity to moving mechanical parts (98.2 percent).

Cognitive Requirements

Interaction with regular contacts is performed by coordinating for 39.1 percent of workers, 33.0 percent by persuading, 16.5 percent by influencing, 10.6 percent by exchanging factual information, and 0.8 percent by resolving controversial issues. For most (84.8 percent) workers the work tasks change less than monthly, for 8.5 percent the tasks change at least one a month, and for another 5.0 percent the tasks change at least once a week.

Educational Requirements

Most (59.8 percent) workers have a minimum educational requirement of a bachelor's degree. Prior work experience is required for 23.9 percent of workers with an average of about 2 and a half years (905 days) of prior work experience. On-the-job training is required for 50.4 percent of workers.



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Farming, Fishing, and Forestry Occupations

This occupational group includes agricultural inspectors, animal breeders, graders and sorters for agricultural products, and other miscellaneous agricultural workers like farmworkers or laborers and agricultural equipment operators. This group also includes fishing workers, hunters and trappers, forest and conservation workers, and logging workers.



Physical Requirements

Over half of jobs (57.0 percent) require a medium strength level. Gross manipulation is required in all of these jobs at some point in the workday, with 44.3 percent constantly performing gross manipulation. Workers are typically standing or walking for over three-quarters (77.0 percent) of their workday. Almost half (48.2 percent) of these jobs also require some climbing of ladders, ropes, or scaffolds, although most of it is only done seldom (31.5 percent).

Environmental Conditions

Fifty-nine percent of workers are exposed to the outdoors, with 42.6 percent constantly working outdoors. These workers most

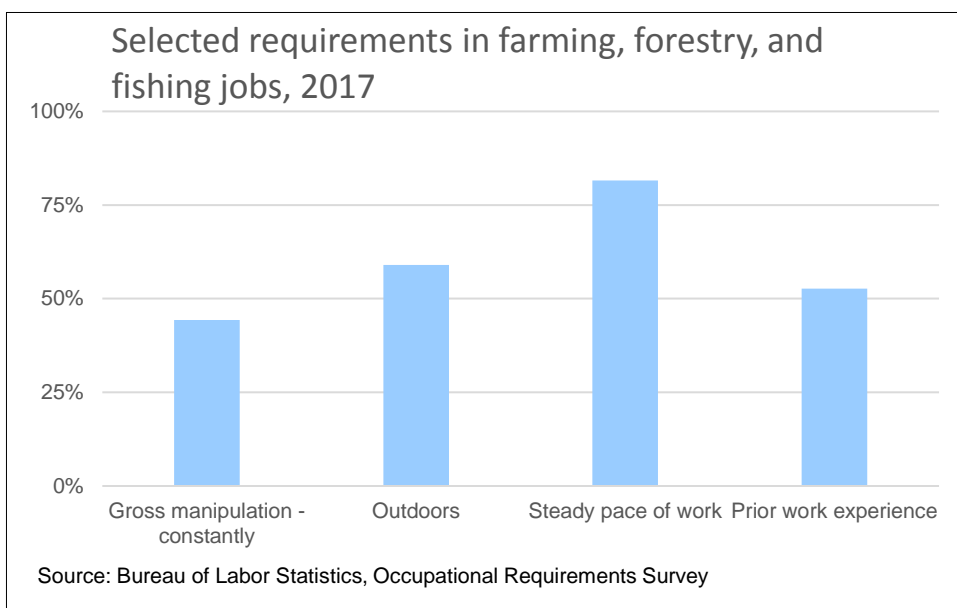
commonly experience a moderate noise level (70.0 percent of workers). Workers are required to be in proximity to moving mechanical parts in 46.6 percent of jobs, and in 56.9 percent of jobs they are exposed to wetness during their workday. Some jobs (39.5 percent) are exposed to hazardous contaminants.

Cognitive Requirements

These jobs are mostly exchanging factual information with regular contacts (64.7 percent) and another 32.8 percent are coordinating with regular contacts. The pace of work is typically steady in 81.6 percent of jobs, and work tasks change less than monthly for almost all (94.0 percent) of these jobs.

Educational Requirements

Most of these jobs (77.8 percent) do not require a minimum education level, however, 59.3 percent are required to read and write. Prior work experience is required for about half (52.7 percent) of these jobs.



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Food Preparation and Serving Related Occupations

This occupational group includes chefs, cooks, bartenders, dishwashers, waiters, waitresses, food servers, hosts, and hostesses.



Physical Requirements

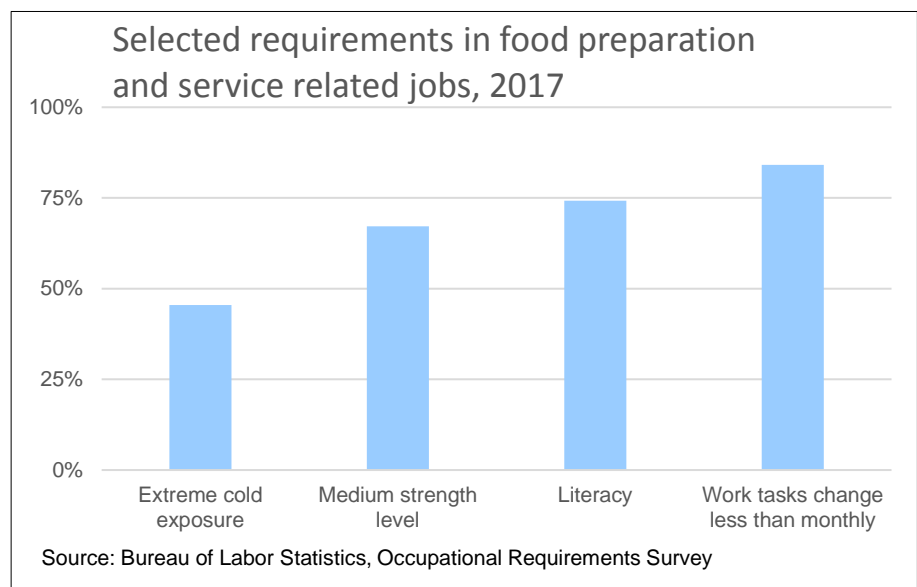
On average workers stand or walk 95.9 percent of the workday and almost all (97.1 percent) workers are not able to choose when to sit versus stand or walk. For most (68.1) workers, the job is considered to have a medium strength level while for 22.7 percent the job is considered a light strength level.

Environmental Conditions

About 45.5 percent of workers experience exposure to extreme cold and 35.5 percent experience exposure to extreme heat. Wetness is present in jobs for 98.4 percent of workers. For 83.1 percent of workers experience a moderate noise intensity level.

Cognitive Requirements

The work tasks change less than monthly for 84.1 percent of workers. The tasks change at least once a month for 5.7 percent of workers, for 5.2 percent the tasks change at least once a day, and for 5.0 percent the tasks change at least once a week. Decision making is generally limited to predetermined actions for 77.5 percent of workers, while 21.2 percent make decisions where there are no set responses, and 1.3 percent make decisions that involve a degree of uncertainty or complexity.



Educational Requirements

For 80.5 percent of workers there is no job requirement for obtaining an educational degree or diploma. However, literacy is required for 74.2 percent of workers and literacy is not required for 6.3 percent for those jobs with no minimum education requirement. Prior work experience is required for 23.6 percent of workers and on average the length is over a year (about 466 days). The preparation time necessary to satisfactorily perform the job is between a short demonstration (4 hours) and up to one month for 69.2 percent of workers. On-the-job training is a requirement for 92.1 percent of workers.

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Healthcare Practitioners and Technical Occupations

This occupational group includes chiropractors, dentists, pharmacists, physicians, surgeons, health diagnosing and treating practitioners, therapists, veterinarians, registered nurses, health technologists and technicians, and occupational health and safety specialists.



Physical Requirements

On average workers sit 35.6 percent of the workday and 64.4 percent of the day standing or walking. Any type of keyboarding is required for 97.7 percent of workers. The average maximum weight lifted or carried by workers is about 46 pounds.

Environmental Conditions

Exposure to wetness is experienced by 84.9 percent of workers and 26.5 percent have outdoor exposure. Most workers (82.7 percent) experience a moderate noise intensity level, 14.4 percent experience a quiet intensity level, and another 2.9 percent a loud intensity level.

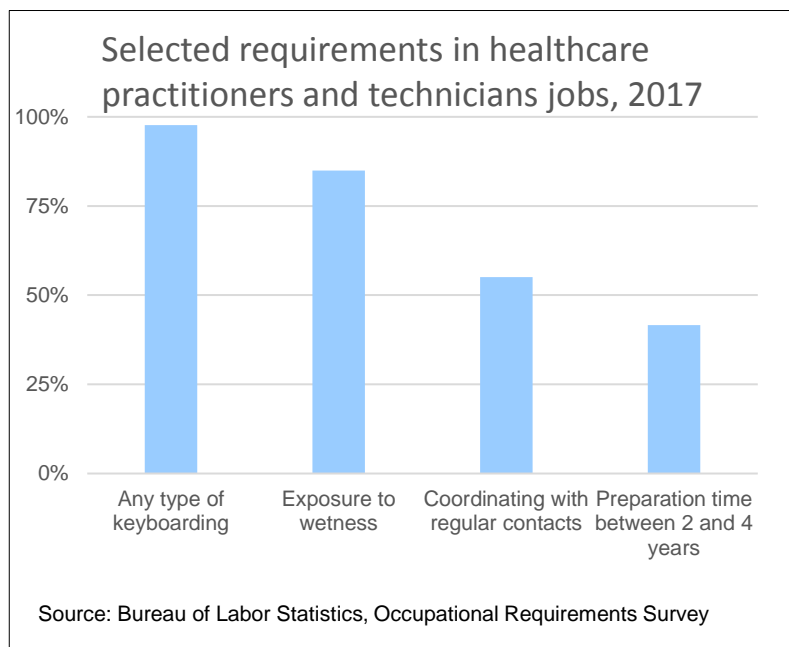
Personal protective equipment to mitigate noise is not provided for 98.2 percent of workers.

Cognitive Requirements

Interaction with regular contacts occurs more than once per hour for 44.1 percent of workers. Most (55.1 percent) workers interacted with regular contacts by coordinating, 27.0 percent by persuading, 9.6 percent by exchanging factual information, and another 7.1 percent by influencing regular contacts. About half (48.7 percent) of jobs the pace of work is rapid, for 48.3 percent it is steady, and for another 3.0 percent it is unhurried.

Educational Requirements

The preparation time necessary to perform the job is between 2 and 4 years for 41.6 percent of workers while for 25.2 percent more than 4 years and up to 10 years is required. The minimum education level required is a bachelor's degree for 27.6 percent of workers, 21.8 percent a high school diploma, 14.3 percent an associate's degree, 6.5 percent a master's degree, 6.0 percent a professional degree, and another 2.1 percent a doctorate.



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Healthcare Support Occupations

This occupational group includes nursing, psychiatric, home health aides, occupational therapy and physical therapist assistants and aides, dental, medical, and veterinary assistants, phlebotomists, and medical transcriptionists.



Physical Requirements

On average, workers spend 73.1 percent of the workday standing or walking and 26.9 percent of the workday sitting. These workers are required to lift or carry an average maximum weight of about 46 pounds. A medium strength level is present for 47.8 percent of workers, for 23.1 percent a light strength level, for 21.6 percent a heavy strength level, and for 4.2 percent a very heavy strength level. Constant verbal communication is a requirement for 48.3 percent of workers.

Environmental Conditions

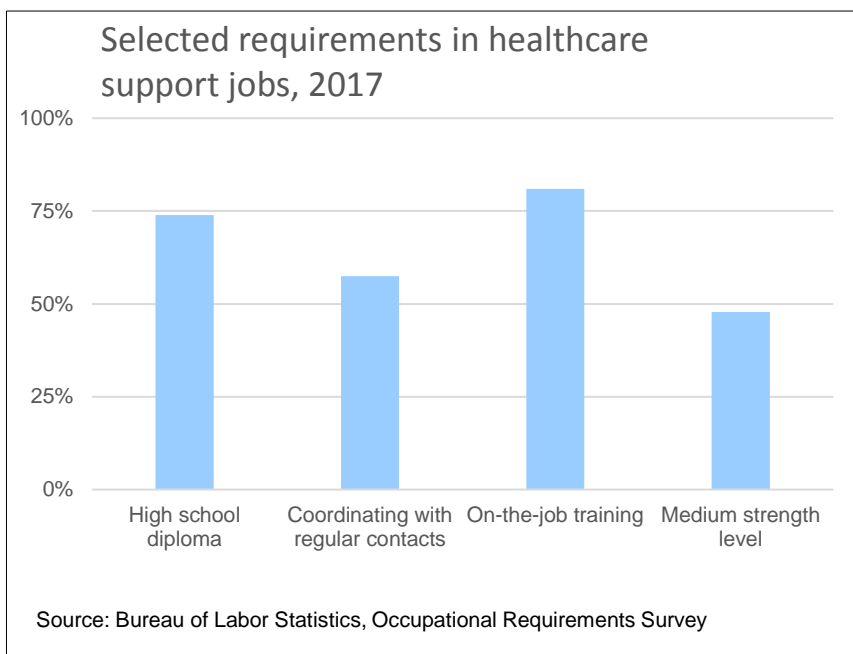
Most (83.4 percent) workers are not exposed to hazardous contaminants. For those that are, 16.5 percent of workers are provided with personal protective equipment, and for 4.2 percent of workers their exposure is fully mitigated by use of this personal protective equipment. Several environmental conditions are not present for workers such as heavy vibrations (99.7 percent), extreme cold (99.5 percent), extreme heat (99.4 percent), high exposed places (99.3 percent), and humidity (98.6 percent).

Cognitive Requirements

Interaction with regular contacts to exchange factual information occurs for 29.0 percent of workers, for 57.5 percent by coordinating, 12.2 percent by persuading, and another 0.9 by influencing. For 51.5 percent of workers the work schedule changes while the work location does not change for 71.6 percent. For 23.1 percent of workers the work location changes by more than four times per year, and for 5.4 percent it changes up to four times per year. For 59.1 percent of workers the pace of work is steady, for 35.5 percent it is rapid, and for another 5.5 percent it is unhurried.

Educational Requirements

The minimum education required for 73.9 percent of workers is a high school diploma. On-the-job training is a requirement for 81.0 percent of workers.



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Installation, Maintenance, and Repair Occupations

This occupational group includes computer, automated teller and office machine repairers, avionics technicians, security and fire alarm systems installers, aircraft mechanics and technicians, bus and truck mechanics, diesel engine specialists, small engine mechanics, bicycle repairers, home appliance repairers, millwrights, watch repairers, wind turbine service technicians, and riggers.



Physical Requirements

Workers spend, on average, 20.8 percent of the workday sitting and 79.2 percent of the workday standing or walking. Fine manipulation with both hands is a requirement for 83.7 percent of workers and for 99.7 percent gross manipulation with both hands is required. The average maximum amount of weight lifted or carried by workers is about 63 pounds.

Environmental Conditions

About 8.8 percent of workers experience exposure to extreme cold and 18.0 percent experience exposure to extreme heat. Exposure to hazardous contaminants occurs in 45.2 percent of

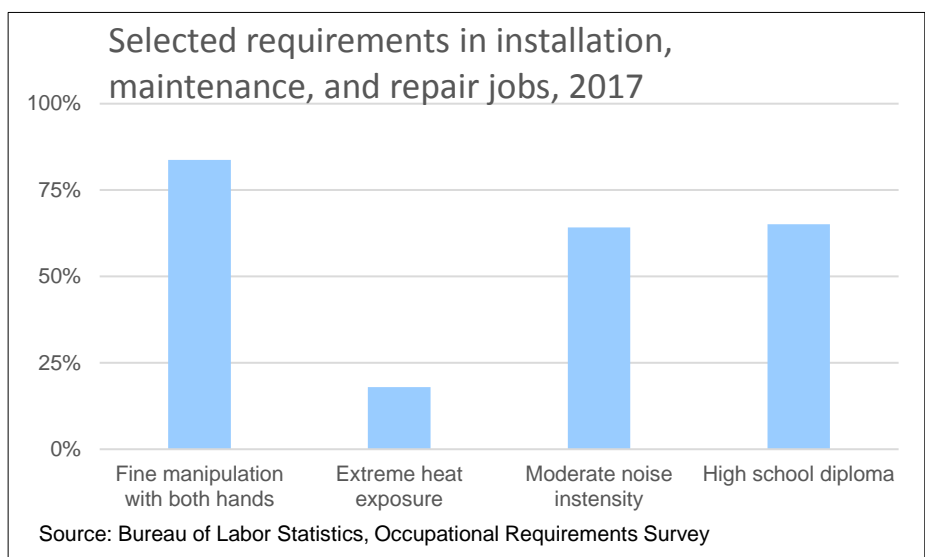
these jobs and heavy vibrations in 20.0 percent. A majority (89.6 percent) of jobs expose workers to the outdoors. Most workers (64.2 percent) experience a moderate noise intensity level, 32.0 percent experience a loud level, and 2.2 percent experience a very loud intensity level.

Cognitive Requirements

Most (77.9 percent) workers perform the same work tasks where the tasks change less than monthly. For 54.9 percent of workers the work schedule changes while the work location does not change for 50.4 percent of workers. A steady pace of work was experienced by 67.3 percent of workers, 31.4 percent experienced a rapid pace, and 1.2 percent an unhurried pace.

Educational Requirements

For most (65.1 percent) workers a high school diploma is the minimum education requirement and another 23.0 percent have no minimum education requirement. Prior work experience is required for most (67.9 percent) workers and the median amount is about 2 years (730 days). The preparation time required is more than 2 years through 4 years for 27.7 percent of workers, more than 4 years through 10 years for 20.3 percent, and more than 1 year through 2 years for 17.7 percent of workers.



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Legal Occupations

This occupational group includes lawyers, judicial law clerks, judges, arbitrators, mediators, conciliators, paralegals, legal assistants, court reporters, title examiners, abstractors, and searchers.



Physical Requirements

On average, workers spend 78.1 percent of the workday sitting and 21.9 percent of the workday standing or walking. Most jobs (60.5 percent) require frequent verbal communication. Crawling, crouching, and kneeling are not often required of these workers, as these physical requirements are not present in 99.3, 79.0, and 87.4 percent of jobs, respectively.

Environmental Conditions

Most workers (65.9 percent) experience a moderate noise intensity level. Another 34.1 percent of workers experience a quiet noise intensity level. Workers are not required to be

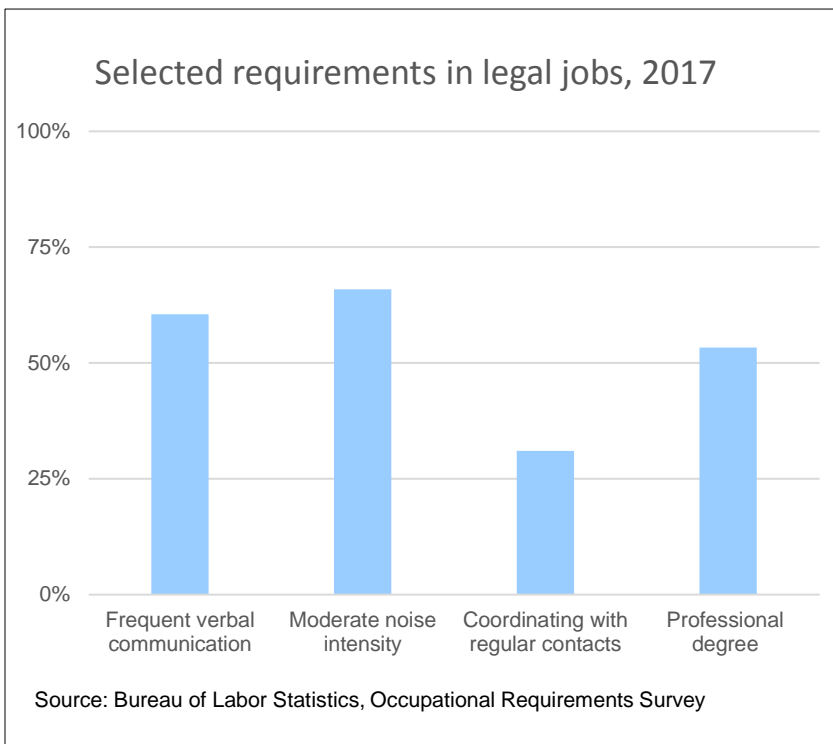
exposed to humidity, heavy vibrations, or a proximity to moving mechanical parts in 100.0 percent of legal jobs.

Cognitive Requirements

Work location changes more than four times per year for 44.6 percent of jobs and never changes for another 45.3 percent. Interaction with regular contacts occurs continuously for 28.8 percent of jobs and more than once per hour for 46.6 percent. Interactions with regular contacts occur by coordinating for 31.0 percent of workers, by persuading for 20.7 percent, by influencing for 22.6 percent, and by resolving controversial issues for 19.5 percent of workers.

Educational Requirements

The most common (53.3 percent) educational requirement for legal occupations is a professional degree. Pre-employment training is required in 63.0 percent of jobs. Prior work experience is required for 58.5 percent of jobs with an average of about 4 years (1,373 days).



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Life, Physical, and Social Science Occupations

This occupational group includes agricultural scientists, food scientists, biological scientists, medical scientists, astronomers, physicists, chemists, hydrologists, economists, survey researchers, psychologists, sociologists, urban planners, anthropologists, archeologists, geographers, historians, political scientists, and nuclear technicians.



Physical Requirements

Most (63.2 percent) workers are able to choose when to sit or stand. Fine manipulation with both hands is required in 61.9 percent of these jobs. Crouching is required in 56.7 percent and pushing or pulling with hands and arms occurs in 23.7 percent of these jobs.

Environmental Conditions

Many (50.3 percent) workers are exposed to hazardous contaminants. For 10.6 percent of workers, exposure to hazardous contaminants is fully mitigated with the use of personal protective equipment. Exposure to wetness occurs in 55.0 percent of these jobs. A proximity to

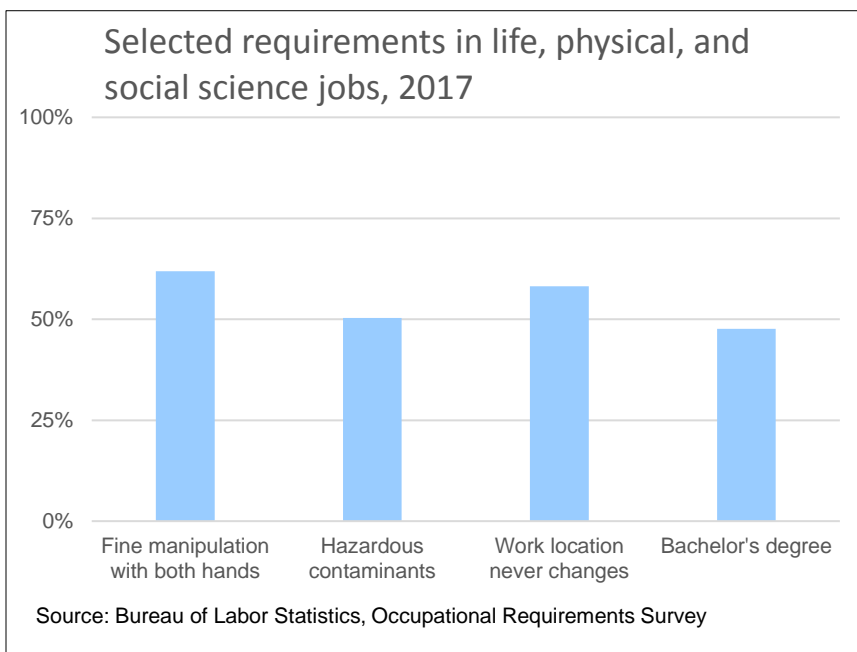
moving mechanical parts occurs in 19.5 percent of jobs. Most jobs do not expose workers to extreme cold (91.5 percent) or extreme heat (88.6 percent).

Cognitive Requirements

A steady pace of work is required for most jobs (72.0 percent). Work location never changes in 58.2 percent of jobs. The type of decision making required in this job most often (51.3 percent) is when there is a degree of uncertainty or complexity. For 35.3 percent of workers interaction with other contacts occurs by coordinating, 24.3 percent by exchanging factual information, 20.0 percent by persuading, and 12.1 percent by influencing.

Educational Requirements

The most common (47.6 percent) requirement for a minimum education in these jobs is a bachelor's degree. Another 16.9 percent of jobs have a master's degree as a minimum requirement. Of these jobs, 69.8 percent require prior work experience with a median length of about 3 years (1095 days).



Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Management Occupations

This occupational group includes chief executives, general and operations managers, advertising and promotions managers, construction, administrative services managers, financial managers, industrial production managers, transportation managers, storage managers, distribution managers, compensation and benefits managers, human resources managers, training managers, development managers, and education administrators.



Physical Requirements

The percentage of management jobs classified as a sedentary strength level is 29.8 percent, a light strength level is required for 35.0 percent, and a medium strength level is required for 31.3 percent.

Environmental Conditions

Most (73.2 percent) workers experience a moderate noise intensity level and 20.9 percent a quiet noise intensity level. Most workers are not exposed to extreme cold (96.9 percent) or extreme heat (96.3 percent). Only 9.6 percent of these jobs require work in proximity to moving mechanical parts and

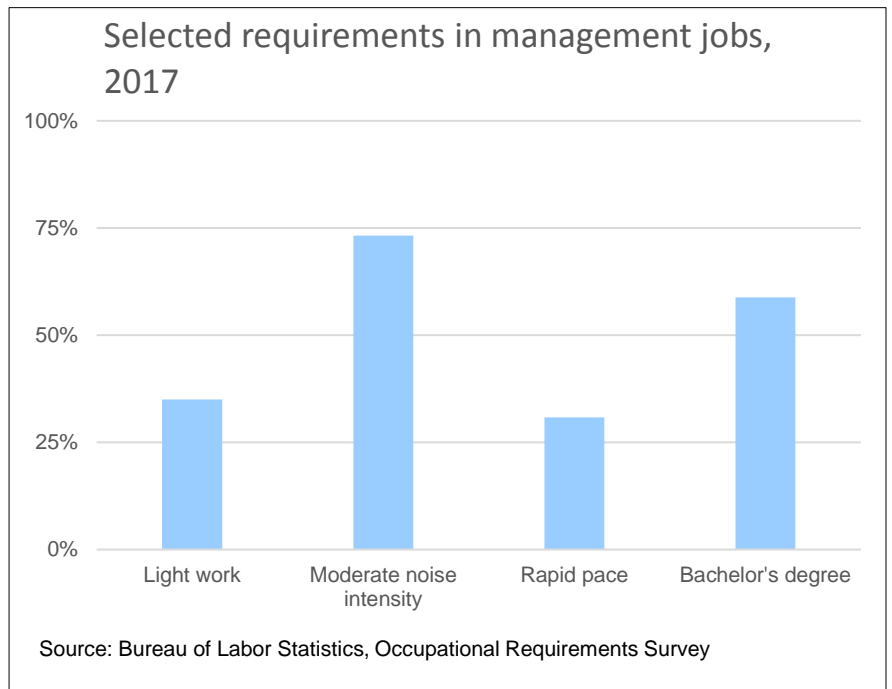
only 13.9 percent require some exposure to wetness.

Cognitive Requirements

Most management jobs (76.8) require a degree of uncertainty or complexity in the level of decision making. The speed of work is steady for 64.5 percent of jobs and rapid for another 30.8 percent. Interaction with regular contacts involves coordinating in 31.0 percent of jobs, persuading in 30.2 percent of jobs, influencing in 26.5 percent of jobs, and resolving controversial issues in 10.2 percent.

Education Requirements

Most (58.8 percent) management jobs have a bachelor's degree as the minimum education requirement and 10.2 percent require a master's degree. Prior work experience is required for 94.4 percent of jobs, and the length of prior work experience required is on average greater than 5 years (1915 days).



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Office and Administrative Support Occupations

This occupational group includes communications equipment and computer operators, bill collectors, gaming cage workers, tellers, information and record clerks, customer service representatives, eligibility interviewers, secretaries and administrative assistants, couriers, dispatchers, data entry and information processing workers, and desktop publishers.



Physical Requirements

On average office and administrative support jobs spend 65.6 percent of the workday sitting. Deciding when to sit or stand is left up to workers in 61.2 percent of jobs. Fine manipulation is required with at least one hand in 98.1 percent of jobs and with both hands in 52.4 percent of jobs.

Environmental Conditions

Exposure to hazardous contaminants is a requirement in 1.4 percent of jobs. A small percentage (2.8 percent) of jobs require work in high and exposed places. In 5.4 percent of jobs, work is performed with workers in proximity to moving

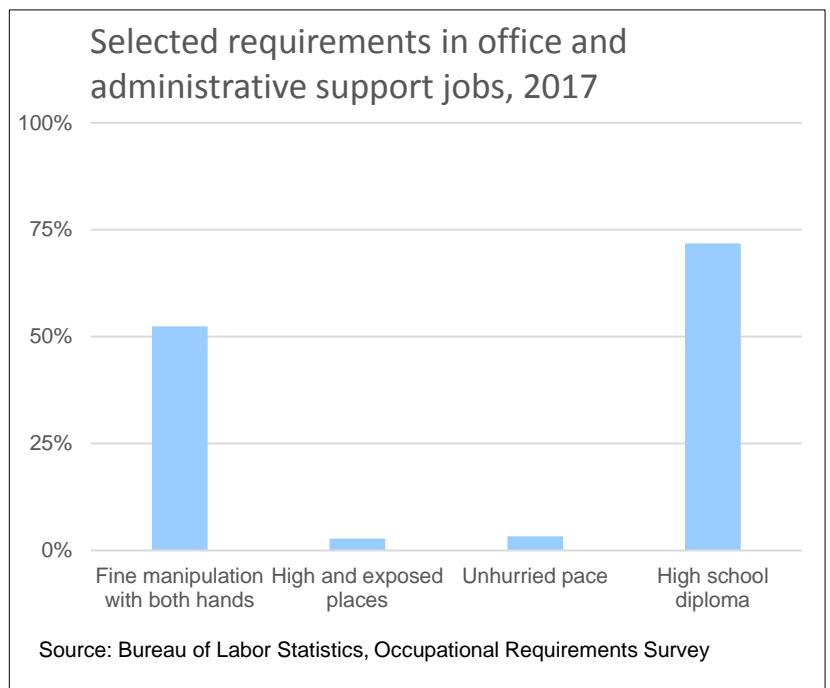
mechanical parts. A moderate noise intensity level is present in 77.8 percent of jobs.

Cognitive Requirements

Most office and administration jobs (78.9 percent) require a pace of work with faster and slower periods. The speed is steady in 66.7 percent of jobs and rapid in another 30.1 percent of jobs. The pace is unhurried in just 3.3 percent of jobs. Interaction with other contacts occurs continuously in 20.5 percent of jobs, more than once per hour in 27.2 percent of jobs, more than once per day in 23.3 percent of jobs, and no more than once per day in 29.0 percent of jobs.

Educational Requirements

Most (71.8 percent) office and administrative support jobs have a minimum education requirement of a high school diploma. Almost all (93.8 percent) of these jobs do not require pre-employment training; although, 80.9 percent require on-the-job training. On average, 54.2 percent of jobs require an average of almost 2 years (about 663 days) of prior work experience.



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Personal Care and Service Occupations

This occupational group includes animal care and service workers, entertainment attendants, funeral service workers, personal appearance workers, baggage portages, bellhops, and concierges, tour and travel guides, childcare workers, personal care aides, recreation and fitness workers, and residential advisors.



Physical Requirements

Most (50.7 percent) personal care and service jobs are classified as a medium strength level, 27.5 percent as a light strength level, and 16.9 percent as a heavy strength level. Workers may be required to lift or carry an average maximum weight of about 41 pounds.

Environmental Conditions

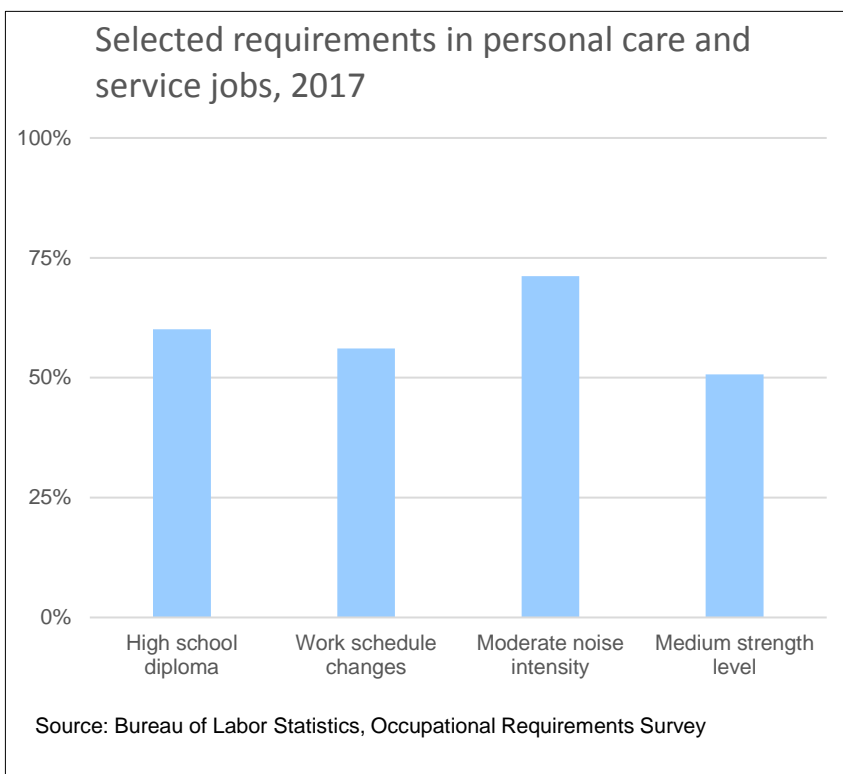
A moderate noise intensity level is present in 71.2 percent of jobs, a quiet noise level is present in 12.4 percent of jobs, and a loud noise intensity level is present in 16.4 percent of jobs.

Cognitive Requirements

Interaction with regular contacts is most often (49.1 percent) performed by coordinating, with another 27.5 percent by factual information exchange, and 20.2 percent by persuading. Work location does not change in 61.6 percent of jobs. Work schedule changes in 56.1 percent of jobs and does not change in the remaining 43.9 percent.

Educational Requirements

The most common (60.1 percent) minimum required education for personal care and service jobs is a high school diploma. Minimum education is not a requirement for 34.8 percent of workers; although literacy is required for 32.4 percent of workers. On-the-job training is required for 85.3 percent of jobs and 33.0 percent require prior work experience.



Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Production Occupations

This occupational group includes engine assemblers, structural metal fabricators and fitters, bakers, butchers and meat cutters, meat packers, computer-controlled machine tool operators, forging machine setters, machinists, pourers and casters, tool and die makers, printing press operators, upholsters, furniture finishers, model makers, gas plant operators, tire builders, etchers, and engravers.



Physical Requirements

On average, workers in production jobs spend 81.8 percent of the workday standing or walking and 18.2 percent of the workday sitting. Workers are required to lift or carry an average maximum weight of about 44 pounds. Approximately 13.2 percent of jobs are classified with a light strength level, 60.1 percent as a medium strength level, and 19.1 percent as heavy.

Environmental Conditions

About 8.7 percent of workers experience exposure to extreme cold and 23.5 percent experience exposure to extreme heat. Conditions requiring high, exposed places occurs in 14.0 percent of these jobs and heavy vibrations in 7.9 percent. Over half

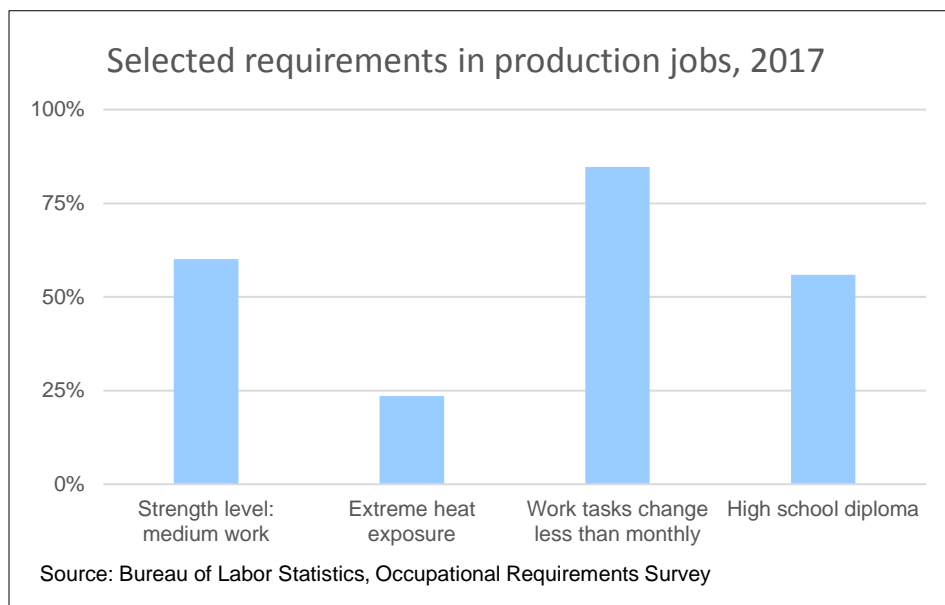
(58.2 percent) of workers experience a moderate noise intensity level, 38.3 percent experience a loud level, and 1.4 percent experience a very loud intensity level.

Cognitive Requirements

Most (84.7 percent) workers perform the same work tasks where the tasks change less than monthly. For 44.9 percent of workers the work schedule changes while the work location does not change for 89.7 percent of workers. A steady pace of work was experienced by 67.0 percent of workers, 31.3 percent experienced a rapid pace, and 1.7 percent an unhurried pace.

Educational Requirements

The minimum education requirement is a high school diploma in 55.9 percent of jobs. Most jobs (89.5 percent) do not require pre-employment training. In 42.1 percent of jobs prior work experience is required and is on average over 2 years (about 767 days). On-the-job training is required for 85.5 percent of jobs.



Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Protective Service Occupations

This occupational group includes workers engaged in firefighting and fire prevention, law enforcement, and animal control, as well as private detectives and investigators, security guards, lifeguards, transportation security screeners, and crossing guards.



Physical Requirements

These jobs require lifting or carrying an average maximum weight of approximately 71 pounds. Climbing work related ramps or stairs is required in 70.5 percent of jobs. In most (84.5 percent) jobs the worker is not able to choose when they can sit versus stand.

Environmental Conditions

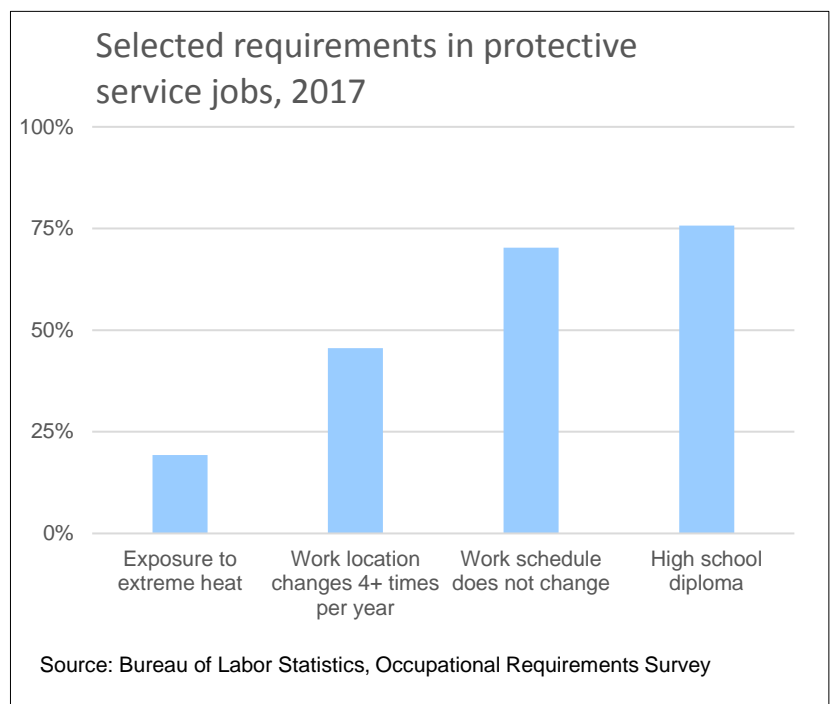
Exposure to extreme cold is a requirement for 8.9 percent of protective service jobs, while 19.3 percent of these jobs require exposure to extreme heat. Exposure to hazardous contaminants is a requirement for 32.6 percent of jobs.

Cognitive Requirements

Most (65.5 percent) workers perform the same work tasks where the tasks change less than monthly. For 45.6 percent of workers the work location changes more than four times per year while the work schedule does not change for 70.3 percent of workers. A rapid pace of work is required by 56.5 percent of workers, 37.5 percent require a steady pace, and 6.1 percent an unhurried pace.

Educational Requirements

A high school diploma was the most common (75.7 percent) minimum education requirement for protective service jobs. Over half of jobs (59.2 percent) require pre-employment training and 37.4 percent require prior work experience. Of those that require it, on average about two and a half years (890 days) of prior work experience are required. Protective service jobs require on-the-job training for 74.3 percent of workers.



Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Sales and Related Occupations

This occupational group includes cashiers, rental clerks, retail salespersons, advertising sales agents, travel agents, wholesale and manufacturing sales representatives, models, demonstrators, product promoters, sales engineers, real estate brokers, street vendors, and telemarketers.



Physical Requirements

Most (57.6 percent) of sales and related jobs are classified as a medium strength level. Workers in these jobs stand or walk for 72.9 percent of the workday. Driving a passenger vehicle is required for 22.5 percent of workers.

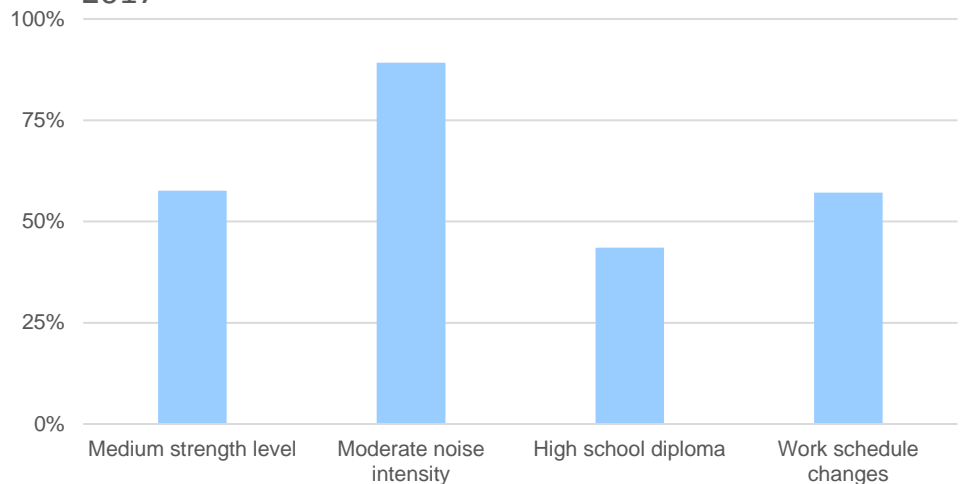
Environmental Conditions

Workers in these jobs typically experience a moderate noise intensity level (89.2 percent). A quiet noise intensity level is experienced by 8.1 percent of workers. Most workers are not exposed to heavy vibrations (99.1 percent), high and exposed places (94.6 percent), or hazardous contaminants (93.9 percent).

Cognitive Requirements

The frequency of interaction with regular contacts occurs more than one per hour for 52.1 percent of workers. Most (81.1 percent) workers perform the same work tasks where the tasks change less than monthly. For 57.1 percent of workers the work schedule changes while the work location does not change for 76.9 percent of workers. A steady pace of work is required by half of jobs (50.0 percent), 46.7 percent require a rapid pace, and 3.3 percent require an unhurried pace.

Selected requirements in sales and related jobs, 2017



Source: Bureau of Labor Statistics, Occupational Requirements Survey

Educational Requirements

Minimum education requirements for these jobs are mostly split between no requirement (46.7 percent) and a high school diploma (43.5 percent). Although some workers are not required to have a minimum education requirement, 46.3 percent of jobs do require worker literacy. Most (88.8 percent) jobs require on-the-job training, and prior work experience is required in 37.4 percent of jobs.

Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Transportation and Material Moving Occupations

This occupational group includes airline pilots, flight attendants, bus drivers, taxi drivers, chauffeurs, locomotive engineers, railroad conductors, ship engineers, parking lot attendants, crane operators, recyclable material collectors, mine shuttle car operators, and ship loaders.



Physical Requirements

On average, these jobs require lifting or carrying an average maximum weight of about 52 pounds. These workers spend 57.6 percent of the workday standing or walking and 42.4 percent of the workday sitting. Climbing ladders, ropes, or scaffolds is present for 33.9 percent of workers. Driving is present for 72.5 percent of workers, where 25.0 percent drive a passenger vehicle and 47.5 drive another type of vehicle.

Environmental Conditions

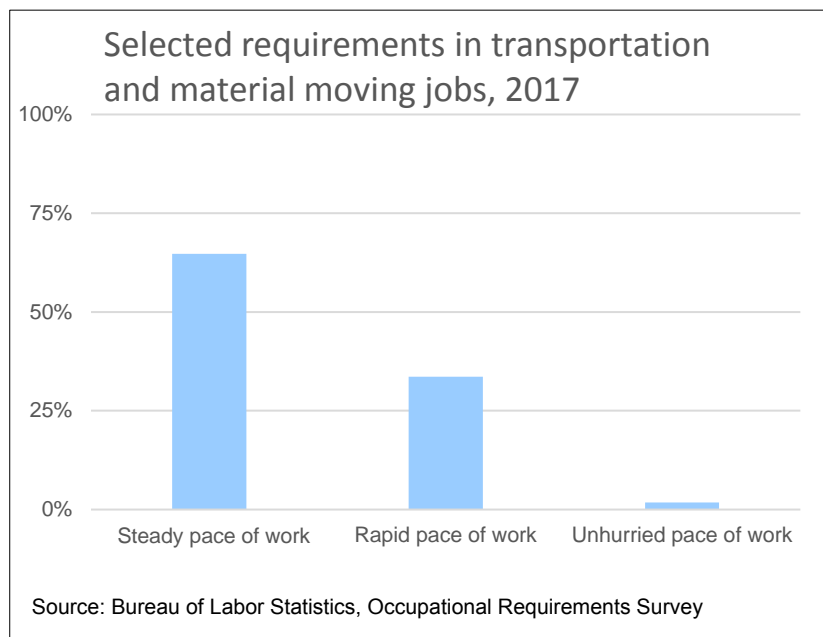
Exposure to hazardous contaminants is experienced by 19.4 percent of workers. Personal protective equipment to mitigate risks associated with hazardous contaminants are provided to 12.8 percent of workers. The exposure to hazardous contaminants is fully mitigated by use of personal protective equipment for 4.1 percent of workers. Twenty-three percent of workers are required to be in high and exposed places. Proximity to moving mechanical parts is present for 40.8 percent of workers. A moderate noise intensity level is experienced by 67.8 percent of workers. Exposure to extreme cold is not experienced by 89.6 percent of workers.

Cognitive Requirements

Most (86.1 percent) workers perform the same work tasks where the tasks change less than monthly. For 53.2 percent of workers the work location does not change. A steady pace of work was experienced by 64.7 percent of workers, 33.6 percent experienced a rapid pace, and 1.8 percent an unhurried pace.

Educational Requirements

Most (55.5 percent) workers have jobs where there is no minimum education requirement nor require a pre-employment training requirement (57.5 percent). About 33.8 percent of these jobs require prior work experience, and most jobs (83.7 percent) require on-the-job training.



Data are from the results of the 2017 Occupational Requirements Survey. For more information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy, see www.bls.gov/ors.

Technical Note

Data in this release are from the Occupational Requirements Survey (ORS), conducted by the U.S. Department of Labor, Bureau of Labor Statistics (BLS). The ORS is an establishment-based survey and provides job-related information about the physical demands, environmental conditions, education and training, and mental requirements of jobs in the U.S. economy. Excluded are the federal government, the military, agricultural workers, private household workers, and the self-employed.

Additional estimates for detailed occupations and occupational groups are available at www.bls.gov/ors/#data.

Sample size

The 2017 estimates are from two samples of data collected from the Occupational Requirements Survey. The ORS is an establishment-based survey and uses a national sample design. To maximize the amount of publishable information, the BLS is combining data across three annual ORS samples to produce the 2018 estimates. The number of publishable occupations and the level of occupational detail is expected to increase with the addition of each subsequent year's sample until the full ORS sample size of 26,500 sampled establishments is reached in 2018.

Data for the 2017 reference period were collected from 2 samples consisting of 14,000 private industry and 2,000 state and local government establishments. The ORS estimates represent 138,400,000 civilian workers in the United States.

Measures of reliability

To assist users in ascertaining the reliability of ORS estimates, standard errors are available for each estimate. For more information on standard errors see: www.bls.gov/ors/se.htm.

Occupational classification

BLS uses the [Standard Occupational Classification \(SOC\)](#) system. The ORS classifies occupations by eight-digit codes used by O*NET's detailed occupational taxonomy referred to as "[O*NET-SOC 2010 Occupations](#)." Military specific occupations (55-0000.00) are out of scope for the ORS. The occupational groups in this publication reflect the 2-digit aggregation of occupations as defined using the 2010 SOC, see www.bls.gov/soc/major_groups.htm.

Definitions of major terms

The complete list of terms is available within the [ORS collection manual](#) and [ORS Handbook of Methods](#). The glossary below contains some major terms used in these occupational group profiles.

Job - group of workers in an establishment that have the same position. The term job refers to a single position within an establishment, whereas occupation refers to a profession or trade. Example: "waiters at Smith's Restaurant" is a job, whereas "waiters" is an occupation.

Civilian workers – includes private industry and state and local government workers. Excluded are the federal government, the military, agricultural workers, private household workers, and the self-employed.

Work as generally performed – ORS data for 2017 were collected under this concept which refers to the way in which most workers normally complete the duties, tasks, and responsibilities as assigned.

Duration levels:

Seldom – up to 2 percent of the day

Occasionally – from 2 percent up to 1/3 of the day

Frequently – from 1/3 up to 2/3 of the day



Constantly – from 2/3 or more of the day

Physical requirements

Fine manipulation – touching, picking, pinching, or otherwise working primarily with fingers rather than with the whole hand or arm.

Gross manipulation – seizing, holding, grasping, turning, or otherwise working with the hands; and also often present when lifting involves the hands.

Strength level – A job is classified into strength five levels: sedentary, light, medium, heavy, and very heavy. The strength level is determined by how much weight a worker is required to lift or carry, how often they have to lift or carry that weight, as well as standing and walking in some special cases.

Pushing or pulling – Pushing or pulling can be done with the hands and arms, feet and legs, or feet only.

Environmental conditions

Extreme cold – 40 degrees or below when exposed 2/3 or more of the time or 32 degrees or below when exposed up to 2/3 of the time.

Extreme heat – above 90 degrees in a dry environment or above 85 degrees in a humid environment.

Hazardous contaminants – exposure that negatively affects the respiratory system, eyes, skin, or other living tissue via inhalation, ingestion, or contact.

Noise intensity level – amount of noise that a worker experiences while working. Examples of noise level:

- Quiet – settings such as a private office or art museum;
- Moderate – business office, department store, fast food restaurant;
- Loud – large earth moving equipment or can manufacturing department;
- Very loud – rock concert or jackhammer work.

Outdoors – is considered present when two conditions exist, (1) a worker performs typical job duties outdoors or a worker moves between different work sites during the workday and (2) a worker is unprotected and exposed to the elements.

Personal protective equipment (PPE) – gear used or worn to minimize exposure to serious workplace injuries and illnesses.

Proximity to moving mechanical parts – refers to moving materials, mechanical parts, settings, or any moving objects that could cause bodily injury.

High and exposed places – when a worker is at risk of falling five feet or more from the worker's center of gravity.

Cognitive requirements

Other contacts – include the public and those with whom the worker has no working relationship.

Regular contacts – those people with whom a worker has an established working relationship.

Frequency of contact – the highest frequency of work-related verbal contact that a worker has with regular and other contacts.

Change in work location – a change to a new worksite or from a discontinued work site.



Change in work task – the worker must remember new instructions, procedures, or similar information. This includes new work assignments, tasks that occur infrequently throughout the year, and irregular/variable tasks.

Decision making – The type and scope of decisions a worker is expected to make ranges from:

- Using independent judgment to select from a limited number of predetermined actions;
- Using independent judgment to determine the most appropriate course of action in situations that do not have set responses;
- Using independent judgment to make decisions by choosing from a large number of possibilities in situations where a high degree of uncertainty or complexity may exist.

Education, training, and experience requirements

Preparation time – the amount of time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job/worker situation. This is also referred to as specific vocational preparation (SVP) and is measure in nine levels from a “short demonstration” to “over 10 years”. For more information see the [Calculation section](#) of the Handbook of Methods.

Minimum education – the lowest level of formal coursework required in a job and excludes general education, see the [Education Requirements](#) fact sheet for more information.

Pre-employment training – the amount of time needed to complete required training as a condition for hiring which may include certifications, licenses, and educational certificates.

On-the-job training – the amount of training time that occurs after an employee has been hired.

Prior work experience – the amount of prior relevant work activity. This excludes any non-vocationally specific requirements.

Literacy – the ability to read and write. This is collected only when no formal education is required, and includes any language used in the establishment.

