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What are the Risks to Minors Who Work in the Construction Industry?

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Although they make up less than 4% of the U.S. construction workforce overall, many adolescents under the age of 18 become construction workers before reaching legal adulthood.[1] This work may be formal or informal, with its legality varying by state, and federal restrictions on certain hazardous tasks laid out in the Fair Labor Standards Act.

Construction is a high-risk industry for workers of all ages, including adolescents. Between 1994 and 2013 in the United States, 143 minors under the age of 18 died from working in the construction industry, making it the second deadliest industry for child workers after agriculture in terms of its fatality rate.[2] For non-fatal injuries, workers aged 16 to 19 had the highest injury rate of any age group in the construction industry from 2013 to 2015, at 139.3 injuries for every 10,000 FTEs.[3] This rate is well above the non-fatal injury rate for most adults in construction (107.6 to 116.7/10,000 FTEs), and almost twice the injury rate for adults who are 65 or older (73.8/10,000 FTEs). Adolescent construction workers have roughly the same risk of suffering a fatal injury as do their coworkers through the age of 44, in addition to the increased risk of non-fatal injuries. The consequences of adolescent workplace injury may have a lifelong health and economic impact, which is particularly concerning. It has been reported that 15% to 26% of minors who were injured on the job reported having permanent complications such as chronic pain or loss of motion.[4] Understanding and preventing these injuries may drastically improve the lives of future construction workers at any age.

Nationally, child workers on construction sites are not uncommon, and most states allow minors under the age of 18 to do construction work in some capacity. The Fair Labor Standards Act (1938) provides the minimum requirements of child labor regulation with which all states must comply, and some states have additional, more restrictive regulations. For example, while the federal law mandates that no worker under the age of 18 may work ''on or about a roof,'' the state of Washington exceeds federal regulation, mandating that minors may not work ''higher than 10 ft off the ground.'' Some states such as Minnesota have gone further, banning minors from working on active construction sites altogether, whereas other states such as North Dakota do not extend any restrictions beyond the federal law for underage construction workers.[5–8]

It can be difficult to navigate the legality of child labor in construction given the range of local and federal laws that govern the industry. Additionally, many young construction workers may be informally employed in violation of federal or state laws, which further complicates the assessment of occupational health and safety in this population.[9,10] Nevertheless, whether adolescents are employed legally or illegally, by their family or by an outside company, they face different risks than their older coworkers. Therefore, it is important for professionals in occupational medicine to be aware of the unique risks to young workers in the construction industry.

CHILD DEVELOPMENT CONSIDERATIONS FOR YOUNG CONSTRUCTION WORKERS AND ''OVERLAPPING VULNERABILITIES''

Teenage workers' employers, parents, or medical providers may be unaware of how the developing adolescent mind and body can put teens at risk of occupational injury. Most visually apparent is the period of rapid physical growth that occurs during adolescence. During this time of musculoskeletal change, risk of fractures and injury to ligaments is increased.[11] Risk of musculoskeletal injury is especially high in construction, due to repetitive motions and stressful physical positions.[12] Physical development of size and/or strength may be incomplete, which may be a risk factor for injury when using certain machinery, construction tools, or equipment that are designed for adult users.[9] The combined factors of physical growth, equipment sizing, and musculoskeletal stress in construction work make adolescent workers uniquely vulnerable to occupational injury.

Similarly, adolescent workers are distinct from their adult counterparts because brain development and hormonal changes may affect risk-taking and decision-making; this may increase young workers' susceptibility to engaging in dangerous work activities. The dorsolateral prefrontal cortex, for example, regulates impulse control and is not fully mature until an individual reaches their mid-20's.[13] Combined with the male-oriented social context of a construction site, youth may feel increased pressure to demonstrate competence by taking excess risks, be reluctant to speak up about safety issues, or minimize the importance of minor injuries and near misses.[4,14,15]

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Organizational risk culture may particularly affect youth risk-taking. Research indicates that adolescent workers engaging in hazardous or illegal work tasks in the construction industry are not uncommon, and adult coworker risk-taking or injury was found to predict youth risk-taking and injury.[10,15] Employers have the responsibility to provide a safe work environment under the Occupational Safety and Health Act. First line supervisors have a critical role to play in creating a culture of safety at the worksite, protecting young workers, and influencing their work habits.[16]

Clinicians must also consider overlapping vulnerabilities, and the resulting interaction of multiple characteristics that may increase a young construction worker's risk of injury. Young, Hispanic construction workers at small firms may be more at risk than similar workers who are older, non-Hispanic, or work at larger firms.[17] Young workers who were fatally injured were more likely to participate in low-wage, part-time, non-unionized, and temporary working arrangements.[9] Additionally, socioeconomic status (SES) among young workers has been linked to injury treatment outcomes, with injured young workers of lower SES being more likely than young workers of higher SES to be treated in costly emergency room visits.[18] Various factors, including language barriers between immigrant workers and native-born supervisors, lack of safety resources at smaller firms, and physiological aspects of youth may all interact to exacerbate risks for young immigrant construction workers. An unfortunate, but all-too-common example is the 2019 death of a 15-year worker old in Alabama. The child was a Guatemalan immigrant to the United States, and a new employee. He was sent to work on a roof without a safety harness on his first day of work. He suffered fatal injuries after falling 40 ft from the roof, prompting OSHA citations for both the general contractor and the subcontractor who employed him.[19]

CONCLUSION

Companies employing minors in construction-related activities should be aware of the potential risks inherent and unique in this work. Employers should have complete understanding of the child labor laws in their municipality and state, as well as federal legal requirements.

Vocational training and apprenticeship programs may be a way to provide youth with a more structured and supervised entry into the construction industry. A focus on hazard identification, formalized training, developing safety habits, and providing resources and support could help reduce risk. These training programs would be particularly valuable if the worker is a member of a minority group, from outside the US, and/or works on smaller construction sites. Such information is typically available through state departments of education or labor, and from construction unions.[16]

Practitioners of occupational medicine who treat young construction workers should discuss unique physiological and behavioral risk factors with patients and their guardians, in addition to possible workplace factors that can contribute to the risk of injury. Occupational medicine professionals can play a crucial role in education and advocacy for young workers.

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