

Research brief

Data quirks

As we all continue to depend on data to make decisions, sometimes trends can seem counterintuitive. It is important to critically consider how to use data-driven answers because large-volume data may mask individual experiences.



Here we explore some unusual data trends from our population database of 20 million claims and predictive modeling. This data is what drives our “Case View” tab in Duration Views. We also hypothesize about one possible reason why this trend is found in the data, knowing that each person may have a variety of factors affecting their ability to return to their normal activities.

Do you find these surprising? What factors do you think impact these trends?



Does time away from work (duration) increase or decrease with age for carpal tunnel syndrome?

Contrary to most conditions that take longer to recover from as we get older, a 25-year-old has a predicted duration of 48 days for carpal tunnel syndrome, which is 4 days longer than someone age 50.

This is true when we hold all other variables the same, such as gender and job class. Medical coding for carpal tunnel syndrome does not account for severity, so it is possible that a younger person may have a severe case because they were doing something forcefully or very ergonomically incorrect for a short amount of time, versus someone older who may have been doing a task that was only slightly unergonomic for many years. The ICD coding does not account for hand dominance, but approximately 90% of people are right-handed.¹

Answer: Decreases with age



Are durations for people with scabies shorter for sedentary jobs or heavy jobs?

Scabies is an infestation of the skin by a mite that causes an itchy rash. This can happen in occupational settings when there are crowds and extended skin-to-skin contact like in nursing homes, prisons and childcare facilities.² People with physically demanding jobs that involve heavy lifting or walking a lot return to work (RTW) sooner (average 4 days) compared to people with sedentary jobs (average 22 days), when all other variables are held constant.

It is possible that people with heavy physical demands at their jobs could more easily avoid skin-to-skin contact with people so they would be allowed to return to work (RTW) sooner, for example if they work outdoors, in warehouses or with machinery.

Answer: Heavy jobs

References

1. Gilbert A. & Wysocki C. (1992). Hand preference and age in the United States. *Neuropsychologia* 30:601-8.
2. Centers for Disease Control and Prevention. (2024) Parasites – Scabies. https://www.cdc.gov/parasites/scabies/gen_info/faqs.html#:~:text=Scabies%20is%20an%20infestation%20of,a%20pimple%2Dlike%20skin%20rash.



Which duration is longer: meniscus (knee) debridement or bunion?

Bunions, a bony deformity on the foot where the big toe leans towards the second toe, can be mild or severe with associated treatments that range from a change in footwear all the way up to surgery. About one-quarter of Americans have bunions. The average return to work (RTW) duration is 60 days. Meniscus debridement is a minimally invasive knee surgery to remove pieces of the torn meniscus that are causing pain and swelling. It is one of the most common orthopedic procedures. The recovery time, on average, is 53 days.

Medical codes dictate injury location, like right or left side, but severity is not accounted for. People with bunions are typically able to work while receiving conservative treatment as is recommended for mild or moderate cases and only severe cases require surgery. This contrasts with meniscus debridement, where surgical treatment may be recommended despite only mild symptoms. Interestingly, meniscus debridement surgery has come under scrutiny after researchers discovered that surgery provided no improved outcomes for patients with meniscus tears due to osteoarthritis or degenerative causes as compared to people that had no surgery.³

Answer: Bunion



Do males or females return to work faster from mild, uncomplicated asthma?

Asthma is a chronic inflammatory disease of the airways which can impact the ability to breathe. The average return to work (RTW) duration for females with a case of mild, uncomplicated asthma is 13 days, while it is 17 days for males when all the other variables are held constant.

Females recovering faster from mild, uncomplicated asthma is counter to current research about the U.S. population as a whole.⁴ This could be explained by our data being impacted by the healthy worker bias. This shift in outcomes occurs when data is predominantly from the workforce because people who are able to work may be healthier than the general population.

Answer: Females

References

3. Evidence Development and Standards Branch, Health Quality Ontario. (2014). Arthroscopic debridement of the knee: an evidence update. *Ont Health Technol Assess Ser.* 14(13):1-43.
4. Zein J. & Erzurum S. (2015). Asthma is different in women. *Curr Allergy Asthma Rep.* 15(6):28.

