Castors on Lab Chairs

1. Cons

The primary argument against having castors on lab chairs appears to be that they increase the risk of someone injuring themselves while getting onto the chair. This is most likely to happen if the seat height is set too high, i.e. at a height where the individual has to hitch themselves up onto the seat, rather than sit down onto it. If they catch the edge of the seat there is a chance that the chair may be propelled backwards, causing the individual to fall to the floor. This would, undoubtedly, be a painful experience and most likely result in bruising, although, in the worst case scenario, such a fall could result in a spinal fracture. The likelihood of the chair shooting away increases if the floor has a smooth surface, e.g. tiles or linoleum, as it does in CLS labs.

Such an accident has never been reported to CLS H&S, but we are aware of Safety Services receiving at least one report from an institute in Coventry. Also, there must have been several cases world/Europe-wide to warrant the introduction of an industry standard. The upshot is that castors are only permitted on chairs with a maximum seat height that allows persons of "normal height" to have both feet firmly on the ground at all times. This rules out draughtsman chairs (standard lab chairs) but allows for castors on operator chairs (standard office chairs). Unfortunately, operator chairs are too low for using at standard lab benches and TC cabinets. (They do, however, come in useful where there is low level benching, e.g. microscope stations, and in the Mezzanine Floor TC suites where the lower ceiling height dictates the use of lower height TC cabinets.)

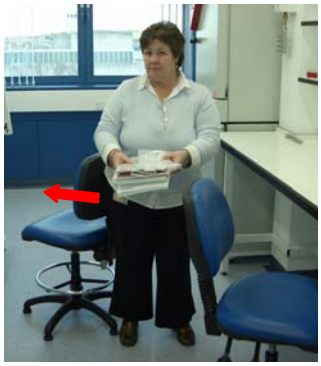
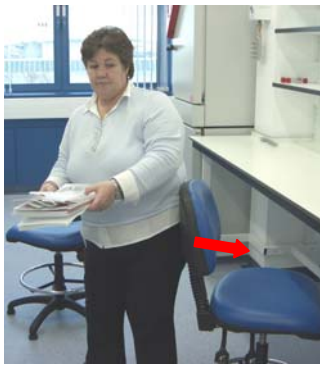
2. Pros

The argument for castors is based on the belief that chairs fitted with glides pose a greater risk of injury than those with castors. The increased risk arises from an increase in the likelihood of injury occurring rather than an increase in the potential severity of the injury, i.e. there are more ways to hurt oneself but the injury is not likely to be as severe as a spinal fracture. It is also worth noting that people who are used to using lab chairs with castors fitted are far more likely to injure themselves than those who are not. The potential problems associated with lab chairs fitted with glides are described below.

a. Glides do not glide!

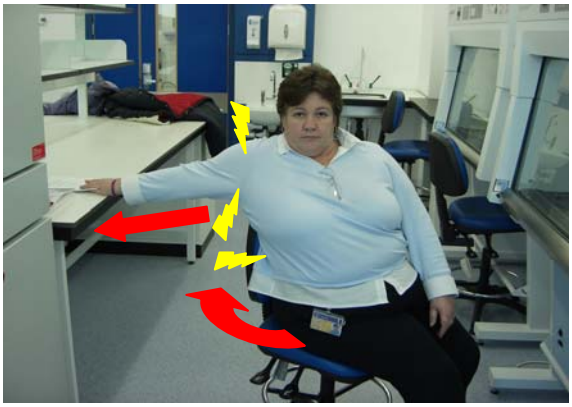
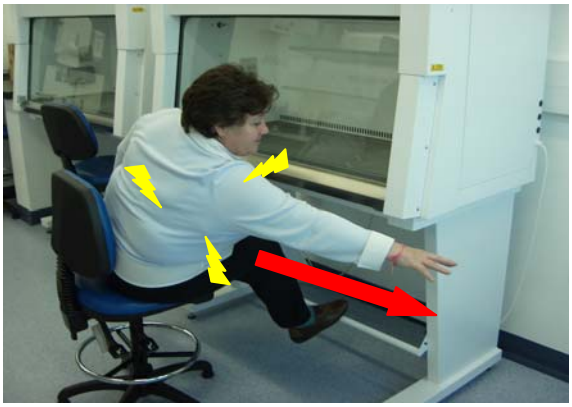
Rather than gliding across the lab floor, chairs fitted with "glides" tend to stick and have to be dragged or lifted in order to move them. Although the chairs are not overly heavy, this is a high frequency activity and the potential for manual handling related injury to the back an upper limbs exists. Those of slight stature, or those with an existing medical condition or weakness, are at greater risk.

b. Chairs fitted with glides create an obstruction in narrow lab bays.

When moving through a lab bay with your hands full, you can nudge a chair fitted with castors out of the way quite easily. If the chairs are fitted with glides you have to put down what you are carrying and move them out of the way - inconvenient, but hardly hazardous - or manoeuvre your way around them increasing the likelihood of a trip/fall and, if the individual is carrying reagents or cultures, causing a hazardous spill. The narrower lab bays make this more of an issue in JBC than it would be in WTB.

c. There is an increased tendency to twist and overstretch.

A worker who has become used to chairs fitted with castors may find the switch to chairs fitted with glides causes them to develop a tendency to twist and overstretch frequently. They will be used to manoeuvring on their chair to reach nearby items, especially in TC where only the minimum amount of consumables/apparatus is kept in the cabinet itself, and now find they have to get up off the chair or overstretch/twist. Human nature dictates that they will take the easy option! The frequency with which these movements are undertaken greatly increases the risk of repetitive strain type injuries to the upper limbs and back. Individuals with an underlying medical condition or weakness are at greater risk.

d. It is difficult to get into position at the bench/TC cabinet.


Positioning yourself at the bench/TC cabinet on a chair fitted with castors is easy: roll the chair out; sit down; roll it in to a distance that is comfortable for you. Take away the castors and the operation becomes more difficult: drag the chair out; sit down; grab the sides and drag or “bump” it forward into position. This causes strain on the upper limbs and back and it is a frequently executed operation, therefore, over time, it could result in injury.

As before, individuals with an underlying medical condition or weakness are at greater risk.

e. Attempting to "push off" can cause the chair to tip.

Those who have recently switched to chairs fitted with glides will frequently attempt to manoeuvre around on their chair as if it still had castors fitted. When you attempt to "push off" this can cause the chair to tip to the side. There weight distribution is such that there is no chance of the chair toppling over, so it is more of an irritation rather than a health risk.

3. Conclusion

Although the potential severity of a fall while attempting to get on to a chair fitted with castors, in the worst case scenario, is high, experience in CLS suggests that the likelihood of such an incident occurring is extremely low, even in an environment where the operation is carried out by hundreds of people, several times a day.

In the case of chairs fitted with glides there are more ways of sustaining an injury, albeit a less severe injury that may take time to develop. Also, as mentioned in section 2, people who are used to chairs fitted with castors are far more likely to do the things that will lead to injury. All our existing staff fall into this category. In terms of how frequently someone may suffer an injury, we have no historical data to draw upon, but personnel on all floors of JBC have been expressing concerns since the building opened in summer 2005 and there has been one verbal report of back pain caused by having to use a chair fitted with glides in TC.

One would have to conclude that, overall, chairs fitted with glides present a greater health risk to CLS personnel than chairs with castors. Health risks aside, fitting castors to the JBC lab chairs would also make for a more comfortable working environment and, in relation to this issue, at least, a happier workforce.

Addendum June 2010

Two accidents have occurred – one in February 2009 and one in June 2010 – which were directly attributable to castors being fitted on a Draughtsman chair. In both cases the victim suffered minor injuries.

In May 2010 an incident occurred involving a chair fitted with glides in which a researcher bumped into a chair expecting it to move out of her way. When it stayed put, she faltered and dropped the centrifuge rotor she was carrying. No injury was sustained but the floor covering and rotor were damaged.

As a result of these accidents/incidents, the risk assessment has been reviewed and rather than the likelihood of falling while attempting to get on to a Draughtsman chair being 'extremely low', it has been re-categorised as 'low' and the risk deemed comparable to that associated with chairs fitted with glides.

In light of this, the H&SWG are conducting a survey amongst all lab personnel to establish whether there is a strong preference for either type of chair. If, in general, there is no strong preference, or there is a definite preference for chairs fitted with glides, the H&SWG recommends that glides are fitted to all Draughtsman chairs within the Complex. If there is a preference for castors in some areas, the H&SWG recommends that individual research groups are fully appraised of the hazards and risk associated with both types of chair and lab workers are instructed in the safe use of their particular chair.