

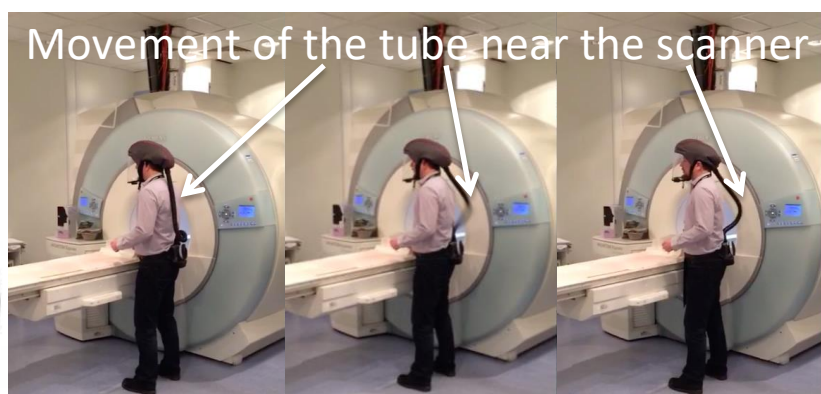
Information on MRI Safety of Two Respiratory Hoods

The MRI Physics Group at University Hospitals Birmingham NHS Foundation Trust performed basic tests (**NOT** conforming to ASTM international standards: **for information only**) of two types of respiratory hoods available at the Queen Elizabeth Hospital Birmingham. **Please follow all local rules and guidance regarding MR safety and appropriate use of PPE in MRI.**

Tornado Hood (photos below): We did not find the hood itself to be ferromagnetic, however, the connecting tube and the filter pack (including battery) are highly ferromagnetic and are subject to **strong** translational and torque forces within **approx. 80-100 cm** of the bore entrance of a 1.5T MRI scanner. If securely fitted, there is minimal projectile risk, however, the forces on the tube can cause a “whip” effect (pictures below). Although the pull did not seem to unseal the hood, the extraction fan within the filter pack slows down when close to the magnet making it ineffective. In **our opinion** this respirator hood is safe for staff positioning patients **up to 1m from the magnet**. (N.B. No respiratory or filter function tests were carried out in the MR Environment.)

Make: SCOTT
Model: Tornado

Conditionally
safe as described



PureFlo 3000 (photos below): This hood has the battery pack and the filter/fan unit built-in, so those parts are ferromagnetic. Those parts seem to be much smaller and therefore undergo less translational and torque forces than the Tornado hood and start to appear within **approx. 50 cm** of the bore entrance of a 1.5T MRI scanner. However, the magnetic field starts to affect the extraction fan (the red warning light comes on in the right upper corner), when less than about 40 cm from the magnet, but returns to its normal functionality when stepped back to more than 50 cm from the bore entrance. In **our opinion** **the pull is not strong enough to displace the hood even closer than 50 cm of the bore entrance**. We recommend that **staff wearing this hood should keep at least an arm's length away from the bore entrance**. (N.B. No respiratory or filter function tests were carried out in the MR Environment.)

Make: Gentex
Model: PureFlo 3000

Conditionally
safe as described

