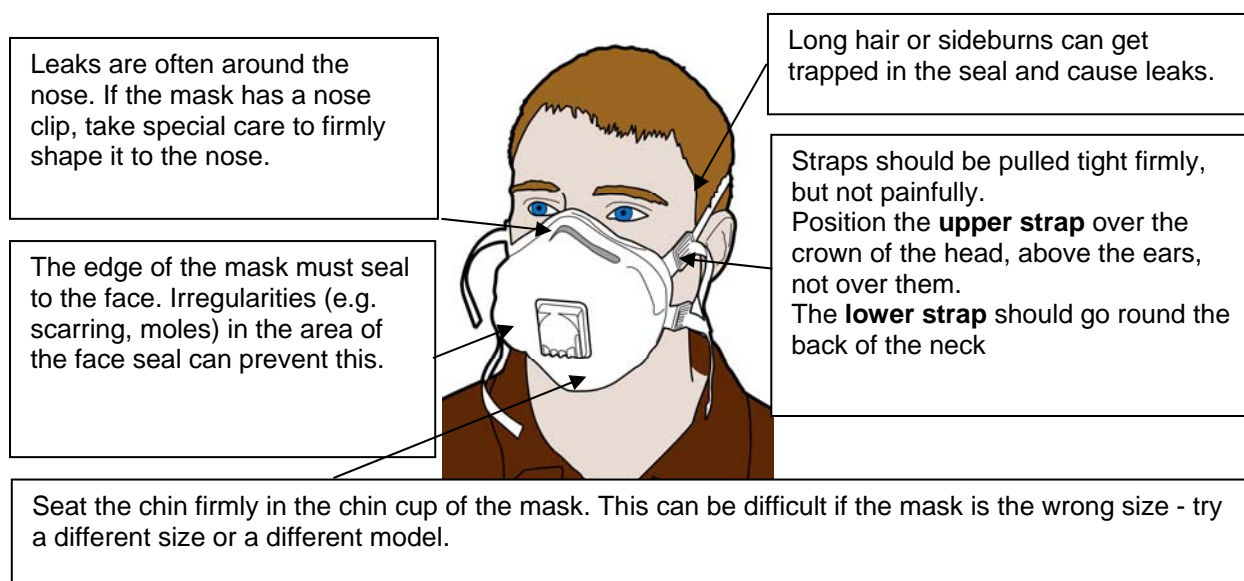# Correct fitting and fit testing of filtering facepiece respirators

Fitting the mask

Respirators are available in different designs and sizes. Some are valved and some unvalved – both options provide a high level of protection when worn correctly.

- Fit testing is a means of assessing how well a respirator seals to a face
- It has to be an individual test because one model will never fit all and every face is different
- Fit tests may fail, and protection will be lost, if the mask isn't being worn properly.
- Sometimes a mask simply won't fit an individual, but often a better fit can be achieved by taking more care when putting it on. Wearers must be clean-shaven to get a good fit with a respirator.

Some of the more frequent problems with fitting and possible solutions are:

Leaks are often around the nose. If the mask has a nose clip, take special care to firmly shape it to the nose.

Long hair or sideburns can get trapped in the seal and cause leaks.

Straps should be pulled tight firmly, but not painfully.
Position the **upper strap** over the crown of the head, above the ears, not over them.
The **lower strap** should go round the back of the neck

The edge of the mask must seal to the face. Irregularities (e.g. scarring, moles) in the area of the face seal can prevent this.

Seat the chin firmly in the chin cup of the mask. This can be difficult if the mask is the wrong size - try a different size or a different model.

Looking in a mirror can help the wearer to fit their facemask more reliably, both for fit testing and normal daily use.

Once the mask is fitted, ask the wearer to look up, down, left and right while you look for problems. If you're happy that there are no gaps, continue with the test. A fit test can be carried out a second time if the mask fails the first time. After two failures with the same mask, you should try a different make, model or size of mask.

Qualitative fit testing

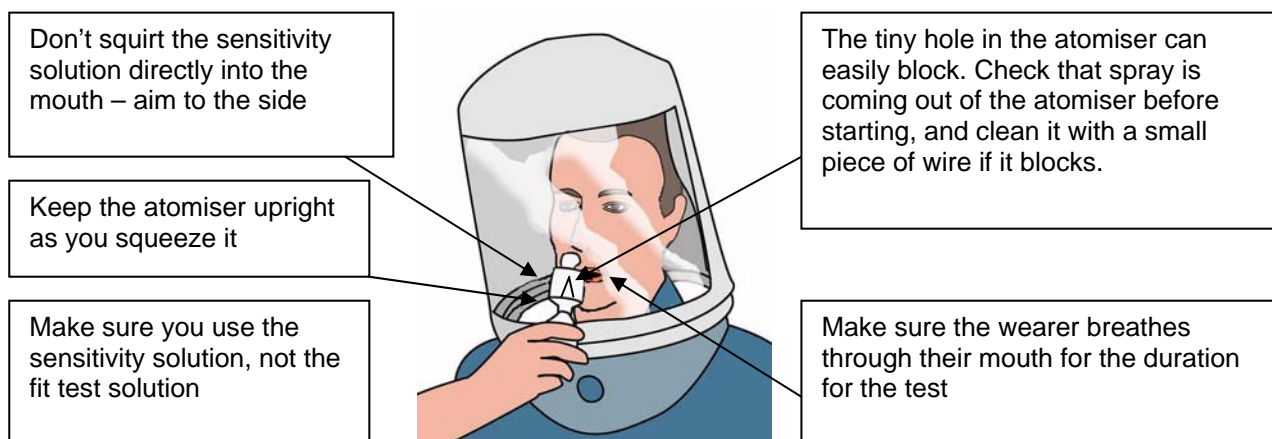**Part 1: The sensitivity test: Using bitrex or saccharin**

The sensitivity test is vital, and **must not** be missed out. The test is done without wearing the respirator to check if you can taste the test solution. Different people taste the test substances more or less strongly, and the sensitivity test accounts for this. A small percentage of the population can't taste bitrex or saccharin well enough, and they will need to use a different fit test method (e.g. a quantitative test using Portacount).

If the wearer cannot taste the sensitivity solution, check the following:
1. Hold the atomiser found in the fit testing kit up to a dark background and squeeze. Watch to see if spray comes out. If it doesn't, clean the hole with the wire included in the kit, or wash the atomiser out thoroughly with clean water, refill with sensitivity solution and try again.
2. Remind the wearer to breathe through their **mouth** throughout the test.
3. Make sure the wearer has not eaten, drunk (except water) or smoked for at least half an hour before the test.

Ensure that:

1. You use the sensitivity test solution, not the fit test solution
2. You use the appropriate sensitivity taste solution – either bitrex or saccharin – to match the fit test solution to be used later.

Don't squirt the sensitivity solution directly into the mouth – aim to the side	The tiny hole in the atomiser can easily block. Check that spray is coming out of the atomiser before starting, and clean it with a small piece of wire if it blocks.
Keep the atomiser upright as you squeeze it	
Make sure you use the sensitivity solution, not the fit test solution	Make sure the wearer breathes through their mouth for the duration for the test

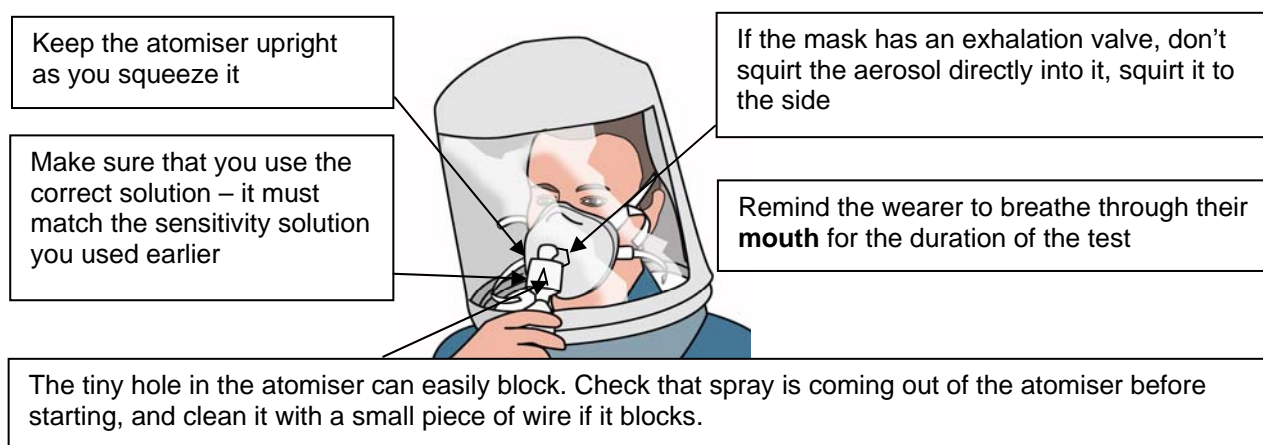**Between the sensitivity test and the fit test**

Do not rush straight into the fit test after the sensitivity test. In between, the wearer needs to remove all traces of the taste of bitrex or saccharin. Wait at least five minutes (or as long as the individual manufacturer advises) between the two parts of the test to make sure the taste has cleared, and:

1. Give the wearer a drink of water to rinse their mouth out;
2. Ask the wearer to wash their hands and around their mouth;
3. Ask the wearer to lick their lips. If they can taste bitrex or saccharin, they should wash around their mouth again. Repeat until clear of taste.

If you are carrying out a lot of fit tests, make sure you do so in a well-ventilated room. Bitrex or saccharin can build up over time, preventing the wearers from removing the taste of bitrex between tests, lengthening test time and leading to false fit test failures.

Part 2: The fit test

After the sensitivity test, once the residual taste has cleared, you can carry out the fit test itself.

Keep the atomiser upright as you squeeze it

Make sure that you use the correct solution – it must match the sensitivity solution you used earlier

If the mask has an exhalation valve, don't squirt the aerosol directly into it, squirt it to the side

Remind the wearer to breathe through their **mouth** for the duration of the test

The tiny hole in the atomiser can easily block. Check that spray is coming out of the atomiser before starting, and clean it with a small piece of wire if it blocks.

If the fit test fails, try the following BEFORE removing the mask:

1. Recheck the fit of the mask, as described in the first section.
2. Make sure you are using the correct solution – if you used bitrex for the sensitivity test, you need to use bitrex for the fit test.

After a successful fit test, ask the wearer to reach up into the hood and break the seal between the mask and the face with their finger – they should then be able to taste the solution. If they can't, you need to repeat the test (starting with the sensitivity test).