

IMPORTANT: If your cheek cell sample contained a lot of saliva, it may be necessary to wait for longer than 10 minutes. If you do not see any DNA after 10 minutes, leave the tube to stand undisturbed for a few hours (or even overnight). Eventually the white fibres of DNA should appear.

- Using the plastic pipette, gently remove the DNA and a little of the liquid and transfer it into the small glass vial. Do not overfill the vial, as you will need to leave enough space for the rubber plug to seal the tube.
- Push the small black rubber stopper into the glass vial so that the plug fits firmly and seals the vial. Please remember that the vial is made of glass — apply only gentle pressure so that you do not break it.
- Ensure the vial and the rubber plug are dry. Place *one drop* of glue (such as *Superglue*, cyanoacrylate) on the top of the plug and rim of the test tube. *Take care not to stick your fingers together, or to get too much glue on the pendant, especially on the glass vial.*



WARNING! *Superglue* — cyanoacrylate — is an irritant. It bonds skin and eyes in seconds. Keep out of reach of children. In case of skin contact use a suitable debonder. In case of eye contact, rinse immediately with warm water and seek medical attention.

- Push the metal cap over the plug and test tube. When the glue has set the tube can be handled. Thread the neck cord through the metal cap, tie the two ends of the cord together.

Your DNA pendant is now ready to wear!

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Make your own DNA pendant Instructions

DNA pendant

This procedure allows you to extract a small amount of DNA from your cheek cells which can be suspended in a glass vial and worn as a pendant.

The DNA extracted by this technique is not pure enough to be used for other purposes, such as medical diagnosis or genealogical studies.

WARNING: This procedure should be followed only by adults or by older children under the supervision of an adult. Supervision is necessary because the procedure involves the use of a potentially hazardous chemical (ethanol, industrial denatured alcohol or methylated spirits, which is not provided in the kit). The pendant itself contains small parts which represent a choking hazard, and it should not therefore be used by children under the age of three.

Before you start

If you have recently eaten, had something to drink or brushed your teeth, you must wait for *three or four hours* before starting this procedure. This is because food, liquids or tooth brushing can wash away many cheek cells so that only a very small amount of DNA will be obtained.

Place the methylated spirits, ethanol or industrial denatured alcohol (IDA) in a small plastic bottle in a freezer *at least two hours* and preferably overnight before carrying out the extraction.



WARNING! Ethanol, IDA and methylated spirits are highly flammable. Most freezers are not spark-proof and there is a risk of explosion if flammable vapour escapes inside the freezer. Therefore it is essential that the bottle containing the liquid is tightly closed before it is placed in the freezer.

Making the pendant

1. Measure one millilitre (1 ml) of the blue extraction solution into a plastic test tube (the tubes are marked at millilitre intervals to guide you). Close the lid of the test tube so that the liquid does not spill. The extraction solution contains a detergent, so you may notice bubbles in the liquid.
2. Remove the sterile cotton wool swab from its protective packaging. Swallow excess saliva so that your mouth is not too wet. Rub the cotton wool swab vigorously around your mouth for *at least two minutes*. Rub the insides of your cheeks and between your gums and cheeks on both the upper and lower jaw and even, gently, below the tongue. The aim is to collect as many cells as possible on the swab, so the more you rub (and the less saliva there is to wash away the cells) the better your results may be.
3. Carefully open the plastic test tube containing the blue extraction solution. Place the tip of the cotton wool swab in the extraction solution. Agitate the cotton wool swab vigorously in the liquid for two full minutes to remove the cheek cells. Press the tip of the swab against the side of the tube as you agitate so that cells are washed off into the extraction solution. The detergent in the solution will break open the cheek cells, releasing your DNA.
4. The next step requires care and a steady hand. Take the ice cold alcohol or meths from the freezer. Angle both tubes and very carefully pour about two millilitres (2 ml) of meths down the side of the test tube, so that the liquid flows gently onto the top of the extraction solution, forming a separate layer (this is rather like making an exotic multi-layered cocktail). Return the test tube to an upright position and close it, then leave it to stand where it will not be disturbed or knocked over.
5. Watch and wait for about 10 minutes (if condensation forms on the outside of the tube, you can wipe it away with your finger). DNA from the cheek cells will slowly diffuse into the upper meths layer. Salt in the extraction solution makes the DNA fibres stick together to form whitish clumps. These slowly rise to the top of the meths, carried by minute air bubbles which can often be seen surrounding the DNA.