

No, Mr Dutton, DNA testing ISIS brides won't tell you who's an Australian citizen

Written by Peter Gunn, Honorary Associate Professor, Forensic Biology, University of Technology Sydney

Home affairs minister Peter Dutton [suggested](#) earlier this week that DNA testing would be needed to verify Australian citizenship claims of ISIS brides trapped in Syria.

There are some people who may claim to be Australian citizens — we don't know whether they are [...] You would need DNA testing and you'd need other checks to be made.

But no DNA testing is going to determine if a person is a citizen. DNA testing can, in theory and in specific circumstances, determine who is related to whom. Yet, there would be so many legal and practical barriers to carrying it out under these circumstances, it's unlikely Mr Dutton's proposal would ever get off the ground.

Read more: [Explainer: ISIS, ISIL, Islamic State or Da'esh?](#)

What type of DNA testing is relevant here?

While we don't know the specifics, Mr Dutton is likely suggesting so-called ISIS brides have their DNA tested to determine parentage or who is closely related to them.

The most common technique is short tandem repeat or [STR testing](#). This looks at parts of a person's DNA, half of which is inherited from the mother, the other half from the father, at the moment that person was conceived. This DNA varies between people and is found in the nucleus of almost every cell in your body.

Broadly speaking, the more closely two people are related, the more of their STRs they share in common.

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But STR tests are of limited value in determining distant family relationships; every “degree of separation” between two people reduces the amount of DNA they have in common by half.

So, in this case, it would be difficult to see how STR testing would give any useful information to connect someone in Syria with relatives much beyond siblings or parents in Australia. For example, two cousins may only have between one 16th and one quarter of their STRs in common, which is far from a convincing “match”.

Sometimes a lab may decide to look at someone’s mitochondrial DNA, or mtDNA, instead. This is only inherited from someone’s mother. This method is nowhere near as discriminating as STR testing, but can help identify maternal relatives.

Read more: [**More than a hunch: identifying Richard III with DNA**](#)

Who can perform this DNA testing?

In Australia, the scope of DNA testing in criminal investigations is tightly controlled by [state](#) and [CO](#) [mmonwealth legislation](#)

. Only STRs from certain convicted criminals can be stored on a database; other DNA samples (from victims, acquitted people) cannot be retained; and there are limitations on the covert collection of samples.

Read more: [**From the crime scene to the courtroom: the journey of a DNA sample**](#)

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In civil matters, laboratories cannot test samples not provided voluntarily, unless under a court order. DNA information from these tests cannot be shared with police.

In both civil and criminal investigations, the collection of DNA samples (usually saliva or cheek cells) is strictly controlled by legislation to ensure the integrity of the sample.

So, what does this mean for Mr Dutton's suggestion?

The following constraints make it difficult to envisage how Mr Dutton's proposal could be implemented:

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samples from the so-called ISIS brides in the Middle East would need to be collected by authorised personnel. But this government is resisting sending officials to that region for [safety reasons](#)

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extensive paperwork would need to be designed, or modified from existing forms, to ensure the integrity of the samples and confirm the identity of the donor

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samples would need to be quickly and securely transported to Australia

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DNA samples are only useful if you have something to compare it to. How many (if any) of the "ISIS brides" have their DNA on a criminal database in Australia?

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if there was no DNA in a criminal database, then close relatives (for instance parents, known siblings) would also need DNA testing. STR testing in these circumstances would provide valuable information of the relationship. However, legally these relatives cannot be compelled to cooperate, unless by court order. Which court would order them to do so, under what

legislation?

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mtDNA testing might be of little value when large family groups are involved, for instance when testing large family groups either held in the Middle East or when comparing with large family groups in Australia

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who will do this testing? Will the burden be placed on the already overworked state or federal government labs, or will private labs do the work?

How will this help?

Even if we were to overcome all these considerable hurdles, what then? How will a DNA test help repatriate the “right” ISIS brides and their families?

No DNA test is going to determine whether a person is a citizen or not. Australia does not collect DNA samples (or fingerprints) from its citizens, be they naturalised or born here. So what's the point?

Read more: [How women wage war – a short history of IS brides, Nazi guards and FARC insurgents](#)

Peter Gunn does not work for, consult, own shares in or receive funding from any company or organisation that would benefit from this article, and has disclosed no relevant affiliations beyond their academic appointment.

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