

Boys' Voice and Puberty Study

Parents' and guardians' information sheet 1 UCLH

We would like to invite your son/ward to take part in a new study into the way boys develop. When boys go through the teenage or adolescent years, many man-like changes happen to the body. These are called puberty. Doctors have set ways of judging how far a boy has developed in puberty called the Tanner stages of Puberty but this needs a clinical examination by the doctor. Outside a medical setting this examination is not usually necessary and can be embarrassing and upsetting. However, knowing whether a boy has started puberty and how far he has developed is necessary for medical and other research.

One of the most noticeable changes to boys during puberty is the lowering of the voice caused by the male hormone testosterone. Although people usually call this 'breaking', there is actually no one single point that the voice 'breaks'. The sound frequency gets lower, and when this drops more, that's we notice it the most, but the voice pitch will still continue to get lower as he gets older.

We have developed an iPad/iPhone app to measure this voice pitch. It asks a boy to speak normally when counting backwards from 20 to 0. The numbers are shown on the screen as it is not a memory or maths test. The app then calculates the average voice frequency in the usual frequency measurement unit Hertz. It then estimates whether the boy has started puberty and how far he has progressed.

Before we can use this as a clinical and research tool it needs to be tested out more. We would like your help. We would like you and or your son/ward to judge whether or not he has started in puberty and how far he has progressed using an information sheet with black and white line diagrams of male genital development. Your doctor may be doing a routine clinical examination anyway as part of his clinical assessment which can provide more information about his puberty development. We would like your observations too using the simple information below.

We will then ask your son/ward to do the voice test with the app twice. An assistant will help him do the counting test on the iPad. Finally he will be given a saliva (spit) collecting tube and package to collect a spit sample at home first thing in the morning on the next day as soon as he wakes up. It's easy to measure testosterone in saliva and this avoids having to have a blood test for this research project. You can post the sample back to us the same day. Your doctor might still want to do a blood test on him in clinic today, however, for other reasons.

As this is a research project and not like a hormone test done in the clinic, no individual results will be available as all your son/ward's information will be used anonymously in statistical calculations. Any personal information we gather today such as date of birth, height, puberty stage and voice pitch will be kept securely within the UCLH firewall.

This is a voluntary study which we have designed to be fun to participate in, but you or your son/ward may not wish to join in and can withdraw at any stage without a reason needing to be given.

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Puberty steps: what point has your son/ward reached in your opinion?

Please tick the closest answer

1. **Prepubertal:** His voice is still like a young boy. He doesn't have any signs of puberty happening such as growth of the penis or testicles and no pubic hair has developed.
2. **In-puberty:** Changes to his body have begun with growth of the penis and testicles, and pubic and he might have got some armpit hair too. His voice is getting a bit deeper.
3. **Completing Puberty:** his puberty is well developed with a man-like penis, testicles and pubic hair. His voice is deep (often called broken) and he is developing a moustache and sideburns.