

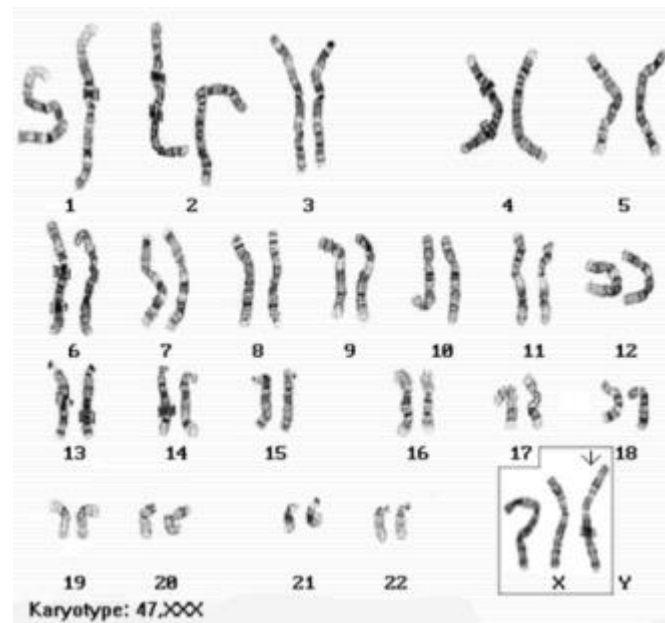


Information for Patients

Triple X

Introduction

Humans are usually born with 46 chromosomes which are arranged in 23 pairs. One of these pairs determines whether a baby is male or female and these are known as the sex chromosomes. Boys are boys because they are born with the sex chromosomes XY and girls are girls because they are born with two X chromosomes (XX).



Occasionally, however, a girl is born with an extra X chromosome and this is known as Triple X. The picture above is a drawing of chromosomes from someone who has an extra X chromosome.

About 1 in 1000 girls has an extra X chromosome, but often they are unaware of it. In Britain it is estimated that there are about 25,000 girls and women who have Triple X. Even though these girls have an extra X sex chromosome, they are 100 per cent female in every way.

What causes Triple X?

This is not known, but in a minority of cases there is some connection with the age of the mother. The extra X chromosome may come from either the mother or father, though the former is more frequent.

How does it affect the person?

The majority of Triple X girls and women lead normal lives in the community. They go to ordinary schools, get jobs, marry and have children, and live until old age. However, there are some differences between girls with Triple X and girls who have the usual pattern of two X chromosomes. Some of these differences are described in this information sheet.

- **Babies**

Most Triple X babies are perfectly formed, but are a little smaller at birth in weight, length and head circumference. The tone of the muscles may be slightly less than usual so the baby may be a little slow to hold her head steady and to sit without support.

- **Toddlers**

Most children walk independently around the age of one year and start to say single words such as 'Mama' and 'Dada' at this time. Girls with Triple X are usually a little later doing these things, for example, they may do these at around 18 months of age. If there is no speech at all by two years of age, the GP should be consulted about checking the child's hearing and other aspects of development. When speech is definitely delayed or pronunciation is unclear then speech therapy starting at around 3-4 years of age will help. Usually the problem disappears after a few years. Many girls with Triple X take longer than average to be toilet trained and to come out of nappies. This may take until age 3½-4 years.

Girls with Triple X may also be a little slower than average at learning to play co-operatively with other children of the same age.

School days

When Triple X girls go to school, some may experience difficulty with reading, writing and maths.

Early recognition of this helps the child not to become overwhelmed or disheartened. Extra teaching on a one-to-one basis will gradually overcome the problem. Careful study of the exact difficulties a child experiences will enable any additional teaching to be correctly focused. Research has shown that Triple X girls often have difficulty remembering what they have learnt recently and that they need the information repeated more times in order to be able to fix it in the memory. If the teacher or parent reacts impatiently to this genuine difficulty for the Triple X girl, this is likely to generate anxiety and confusion in the child, which will be counterproductive.

For some Triple X girls, but certainly not all, making friends at school can be a problem. This may result from lack of self-confidence if they have found that they fail at many things in which others of the same age appear to succeed quite effortlessly. An accepting attitude of the parents to the child's worth as a person rather than an expectation of high achievements is helpful in building self-confidence.

Intelligence

When intelligence tests have been carried out on girls with Triple X it has been found that their average score was about 20 points lower than the national average. Within families, the intelligence level (sometimes called IQ) of Triple X girls tends to be lower than that of their sisters and brothers. It is important to remember, however, that IQ tests were designed to predict school success and give no information about many important aspects of character, like determination, honesty and reliability, which are of major importance in finding and keeping a job.

Growth in childhood and during adolescence

There is a tendency for some Triple X girls to grow rather more rapidly between four and nine years, particularly in their legs. In rare instances this may be excessive and, in such cases, medical advice should be sought. Development of the breasts starts around age 11 and periods start between 13 and 15 years of age.

Further education and employment

Many girls with Triple X go on to further education after leaving school. In the past, the majority of Triple X women have gone into jobs of a practical nature, such as jobs in catering, caring for children and older people, hairdressing or working in shops. There is no evidence of an increase in unemployment amongst women with Triple X.

Parenthood and fertility

The majority of women with Triple X will have no problem in becoming pregnant and can expect to produce healthy children. However, a few women have had an earlier menopause than normal.

For more information

If you need more advice about any aspect of Triple X, you are welcome to contact:

Manchester Centre for Genomic Medicine

Sixth Floor
Saint Mary's Hospital
Oxford Road Manchester M13 9WL

Telephone: (0161) 276 6506 (Reception)

Facsimile: (0161) 276 6145

Department staffed Monday–Friday, 9.00 am to 5.00 pm.

Website: www.mangen.co.uk

Unique, the Rare Chromosome Disorder Support Group, is a source of information, mutual support and self-help for families of children with any rare chromosome disorders, including Triple X.

Unique (Rare Chromosome Disorder Support Group)

Telephone: 01883 330766

E-mail: info@rarechromo.org

Website: www.rarechromo.org

Please let us know if you would like this leaflet in another format (e.g. large print, Braille, audio).

The information in this leaflet was collated from various sources including the work of Dr Shirley Ratcliffe, who has made a special study of sex chromosome disorders. Thanks also to the Kennedy- Galton Centre.

We would like to acknowledge our Clinical Genetics colleagues at Guy's and St Thomas' Hospital NHS Trust who originally designed and wrote this leaflet.

Seen in clinic by (doctor): _____

And (Genetic Counsellor): _____

Telephone number: _____

Family reference number: _____