

**TETRALOGY OF FALLOT-COMPLEX GENETIC NETWORK RELATED  
CONGENITAL HEART DEFECT**

**Choriyev Firdavs Farxodovich**

The 1 st year student of Termez branch of Tashkent Medical Academy

**Jumaqulova Mehriniso G`ayratovna**

The 1 st year student of Termez branch of Tashkent Medical Academy

**Sattarov Quvonchbek Abdullayevich**

The 1 st year student of Termez branch of Tashkent Medical Academy

**Abstract:** According to many cases, congenital heart disease (CHD) is represented by a complex phenotype and an array of several functional and morphological cardiac disorders. One widespread defect that thousand suffer from is Tetralogy of Fallot in which a baby is born with four abnormalities in the period of their heart developed. These issues make it hard for the baby's heart to send enough oxygen to their entire body. In this article, I illustrate most widespread causes of this disease and experienced methods to avoid and number of ways of treatment. Despite this defect is rare in these days, it is still observed in many countries even in medicine properly developed one.

**Key words:** chambers, disease, cardiologist, oxygen, pulmonary arteries, normal route.

First and foremost there are four main abnormalities of Tetralogy of Fallot:

1. There is a hole between ventricular of an individual's heart (on the wall of ventricular) which combines the oxygen contributing blood with non-oxygen.
2. There is an abnormal thinness of pulmonary valve and pulmonary artery and this effects to the blood circulation by the shortage of oxygen on it.
3. The valve of aorta and itself are shifted over. As there is a hole between primary chambers of a heart, the blood does not provide oxygen enough. And because of this, the blood goes through aorta to entire body, which supposed to run to pulmonary artery.
4. As a result of above mentioned abnormalities of heart, the muscle of lower right chamber becomes over thin than it should in order to make up for the heart's other abnormalities.

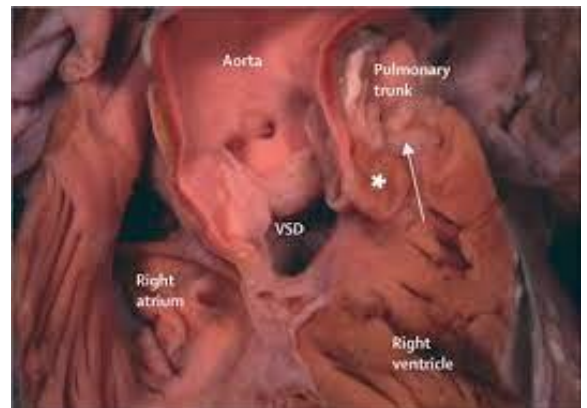
# МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ: ТЕОРИЯ И ПРАКТИКА

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Tetralogy of Fallot is mainly observed in who are assigned male at birth or in some cases babies with Dawn syndrome or changes in chromosomes. Although this disease is not so frequent as other diseases in many nations, it is common as congenital(since birth). There are some rates which shows how it is common: in United states of America in one out of 2.500 babies TOF is designed, in Germany it has a prevalence of 2.7 per 10.000 live births. One of the symptoms of TOF is cyanosis in which a baby or child may have bluish skin because of low rate of oxygen. But sometimes it does not occur because of having slightly lower oxygen. It is assumed that in some cases some changes on gene and family history may cause TOF but in many cases it comes by chance with no reasons.



There are symptoms of Tetralogy of fallot shows, however it can show up in different ways in each child. Easily visible and common one is a bluish color of the skin of a patient, lips, nail beds. This consequence called as TET spells. Once it happens a child faces the difficulty with breathing and may lose consciousness or feel tiredness or fussy at least. Moreover, some signs of TOF is similar to other diseases so for a diagnosis make sure that your child sees a healthcare provider. This diagnose is done by a cardiologist (heart doctor) in which they check how heart and lungs are functioning. The result of this test depends on age and condition of a patient.

It is important to check your chest with X-ray. A chest X-ray may show changes in the heart and lungs caused by TOF.

ECG records the electrical activity of the heart. It also shows abnormal rhythms (arrhythmias or dysrhythmias) and spots heart muscle stress. These issues may be caused by TOF.

An Echocardiogram (echo) uses sound waves to make a moving picture of the heart and heart valves. This test may show structural changes caused by TOF.

A Cardiac catheterization (cardiac or heart cath) gives detailed information about the structures inside the heart. In this test, a small, thin, flexible tube (catheter) is put into a blood vessel in your child's groin. Then the healthcare provider guides it to your child's heart. They will inject your child with contrast dye to see their heart more clearly. This test measures your child's blood pressure and oxygen in the 4 chambers of the heart. It also measures blood pressure and oxygen in the pulmonary artery and aorta. Your child will get medicine to help them relax and prevent pain (sedation).

**Now let's move to next most interesting part: How is tetralogy of Fallot treated?**

Treatment will depend on your child's symptoms, age, and general health. It will also depend on how severe the condition is. Some children will need a shunt put in for stable pulmonary blood flow until a more permanent repair can be done at a later age. All children with TOF need to have surgery to fix it. Most children have it before they turn 1-year-old. It's often done around age 6 months. A team of heart surgeons will do your child's surgery. To fix TOF the doctor may use a patch to close the ventricle septal defect (VSD). Enlarging the right ventricular outflow tract can be done by relieving pulmonary stenosis by removing excessive heart muscle and/or possibly using a patch to enlarge the pulmonary arteries if there is narrowing. Fixing the heart defects will allow oxygen-poor blood to travel its normal route. This is through the pulmonary artery to the lungs to pick up oxygen.

There are possible complications of tetralogy of Fallot

This condition often doesn't cause complications. If left untreated, it can cause these problems:

1. Blood clots (which may be in the brain causing stroke)
2. Infection in the lining of the heart and heart valves (bacteria endocarditis)
3. Abnormal heart rhythms (arrhythmias)
4. Heart failure
5. Death

Once you-parents did all of possible procedures to treat this disease, after surgery, your child may become tired easily



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and sleep more. Eventually, most children are able to be active. Children's activity levels, appetite, and growth become normal soon after surgery. But some children who had surgery for TOF can have problems learning or growing normally. Your child's heart doctor may give them antibiotics to prevent infections after leaving the hospital. Your child may also need medicine before other surgeries or dental tests. Most children who have surgery for this condition will live healthy lives. They may need more surgeries throughout their lives. One might be a pulmonary valve replacement surgery when they are adults. This will help prevent heart complications. These include enlargement of the right ventricle, abnormal heart rhythms, and heart failure. Women who want to have children should be checked by a heart doctor before they get pregnant. Outlook is important to observe patient's condition, so ask your child's healthcare provider about your child's outlook. Over time, if you observe any changes or if your child have trouble breathing, eating or being active, you need to call your child's healthcare provider.

Conclusion, there are key points about tetralogy of Fallot: Tetralogy of Fallot is a group of 4 congenital heart defects. Children are born with this condition. This condition gets in the way of the heart's ability to pump oxygen-rich blood to the body. All children with TOF need to have surgery to fix it. After surgery, most children will live healthy lives. Most children who have had surgery for TOF will need more surgical or interventional procedures in adulthood.

Tips to help you get the most from a visit to your child's healthcare provider: Know the reason for the visit and what you want to happen. Before your visit, write down questions you want answered. At the visit, write down the name of a new diagnosis, and any new medicines, treatments, or tests. Also write down any new instructions your provider gives you for your child. Know why a new medicine or treatment is prescribed and how it will help your child. Also know what the side effects are. Ask if your child's condition can be treated in other ways. Know why a test or procedure is recommended and what the results could mean. Know what to expect if your child does not take the medicine or have the test or procedure. If your child has a follow-up appointment, write down the date, time, and purpose for that visit. Know how you can contact your child's provider after office hours. This is important if your child becomes ill and you have questions or need advice.

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