



Dr Wolfgang Muller (Consultant Paediatrician)

Information for Parents:

Antibiotics and Your Child's Immune System

Antibiotics are **life-saving medicines** when used for serious bacterial infections. They have transformed modern medicine and protect children from illnesses that were once often fatal.

But when antibiotics are given unnecessarily, they can cause problems for your child's natural defences. This leaflet explains why careful use of antibiotics is important.

1. What antibiotics do

- Antibiotics kill bacteria that cause infections.
- They do **not** work against viruses (such as colds, flu, or most sore throats).
- Doctors only prescribe antibiotics when there is strong evidence that bacteria are the cause.

2. How unnecessary antibiotics can affect your child

a) Your child's natural "good bacteria" (the microbiome)

- Children carry billions of healthy bacteria on their skin, in their nose, throat and lungs, and in their gut.
- This **microbiome** helps the immune system learn, grow stronger, and keep harmful bugs away.
- Antibiotics can disturb these natural bacteria, reducing their variety and balance.
- This may increase the risk of allergies (like asthma, hay fever, or eczema) and some immune or tummy conditions later in life.



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b) Higher chance of new infections

- When protective bacteria are reduced, harmful germs can take over.
- This can make children more likely to get problems such as diarrhoea (*Clostridioides difficile*) or thrush.
- Children who take antibiotics often may find infections come back more frequently.

c) Antibiotic resistance

- Each time antibiotics are used, some bacteria learn to resist them.
- Resistant bacteria are harder to treat and can spread within families and the community.

d) Other possible effects

- Some research links repeated antibiotics in the first years of life to later problems such as being overweight or developing certain long-term conditions, though the evidence is still emerging.

3. When antibiotics are essential

- For serious bacterial illnesses such as pneumonia, kidney or urinary infections, or blood poisoning.
- In these situations, antibiotics are **life-saving and the benefits clearly outweigh any risks.**

4. What doctors can do

- Doctors should take a good history and examine your child carefully.
- It is often possible to decide based on this whether the symptoms are most likely due to a viral or bacterial infection.
- They may decide to arrange additional tests to help with the decision.



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5. What parents can do

- Trust your doctor's judgement about when antibiotics are needed.
- Do not ask for antibiotics if your child's illness is likely caused by a virus.
- Stay vigilant in case your child's symptoms continue, progress or change and arrange a review to give your doctor the chance to reassess – see **“When should I see a doctor?”** at the end of the information leaflet.
- If antibiotics are prescribed:
 - Give the medicine exactly as instructed and finish the full course.
 - Do not share leftover antibiotics or use old prescriptions.
- Support your child's recovery with rest, fluids, and fever relief (paracetamol or ibuprofen, if advised) – See **“Acute infection: What can I do?”** At the end of the information leaflet.

Key message

Antibiotics save lives when used correctly. But when used unnecessarily, they can upset the natural bacteria on your child's skin, in the lungs and gut, and weaken the balance of their immune system. This may lead to more infections, allergies, or resistant germs in the future.

If you are unsure whether your child needs antibiotics, ask your doctor to explain the benefits and risks.

Enclosed is a link to further parent information:

Parent information on “My child is unwell – When should I see a doctor?”

<https://drwmuller.com/information-for-parents-carers/>

See: Emergencies: “When do I need to see a doctor urgently?”

Enclosed is a link to further parent information:

Parent information on supportive measures during infections:

<https://drwmuller.com/information-for-parents-carers/>

See: Infection: “Acute infection - what can I do?”

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