

## Misuse of Antibiotics

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Antibiotics have been considered as one of the biggest advances till date. But the unnecessary prescription of analgesics and antibiotics to treat dental pain and bacterial infection is a growing health concern. This indeed can have a negative impact on an individuals as well as community health levels.

### Why It's harmful to overuse them

In the last decade, there has been a tremendous surge in developing increased incidence of microbial resistance after using non-prescribed antibiotics against numerous diseases.

When an antibiotic no longer has an effect on the particular bacterial strain, those bacteria are said to be antibiotic resistant. The efficacies of the various antibiotics are under threat as the prevalence of antimicrobial resistance is also increasing, which has reached a pandemic stage and is a matter of serious concern.

Some of the common reasons of developing antibiotic resistance may be:

- Failure to complete therapy
- Skipping of prescribed doses
- Self medication
- Re-use of leftover antibiotics

### Reasons of antibiotics misuse

- **Availability without prescription:** Over the counter availability of antibiotics without prescriptions has been one of the most important factor that contributes to the public behavior toward over-consumption.
- **Withdrawal after observing results:** It has been noted that if the patient feels better before the course is completed, they stop the consumption of antibiotics according to their prescribed regime. It increases the chances of infection to re-occur and may require treatment again. The length of treatment allows to maintain the concentration of antibiotics in the bloodstream, so that they are effective.

- **Having antibiotics for viral infections:** The most common mistake people make is by taking antibiotics for viral or fungal infections, as in cold, flu, sinusitis – all of which are caused by viruses. Antibiotics cannot treat viral infections or fungal infections and are of no use. They in turn may cause side effects or make one resistant to antibiotics.
- **Low cost of antibiotics:** Another factor that causes antibiotic development to lack economic appeal is the relatively low cost of antibiotics. Newer antibiotics are way to cheaper than certain drugs like Chemotherapy drugs. This low cost of antibiotics has led to a perception of low value among payers and the public
- **Multi – drug resistance:** Antibiotic resistance occurs when the antibiotics are not consumed according to the prescribed regime or when they are not needed, as Bacteria's change or adapt over time.

### Side effects of anti – biotics

#### Digestive problems

Mild Symptoms of digestion problems include:

- Nausea
- Vomiting
- diarrhea
- Bloating
- indigestion
- Loss of appetite
- Stomach cramping or pain

Severe symptoms include

- Blood or mucus in stool
- Severe diarrhea
- Intense stomach cramping or pain
- fever
- Uncontrollable vomiting

Allergic reactions

Allergy to Antibiotics is common, especially Penicillin and Cephalosporin. It may possess following symptoms

- A raised, itchy skin rash (urticaria, or hives)
- Coughing
- Wheezing
- Tightness of the throat, which can cause breathing difficulties

In Rare cases it may cause Anaphylactic Reaction which is a medical emergency and requires immediate hospitalization.

Fungal infections

Although Antibiotics are designed to kill harmful bacteria, sometimes they kill the good bacteria that protect people from fungal infections.

This may lead to developing fungal infections. People taking antibiotics or who have taken them and think they may have a fungal infection should talk with their doctor as soon as possible.

Antibiotics cannot treat fungal infections.

Symptoms of common fungal infections include:

- A white, thick coating in the mouth and throat
- Pain while eating or swallowing
- White patches on the throat, cheeks, roof of the mouth, or tongue
- Loss of taste
- A cottony feeling in the mouth

Rare side effects

- **Kidney failure:** The kidneys are responsible for removing toxins, including medications, from the blood and body through urine. Antibiotics can overburden and damage the kidneys in people with kidney conditions, the main function of which is to remove toxins from the body through urine excretion. Always prescribe lower dose for such patients.
- **Clostridium difficile-induced colitis:** C-difficile-induced colitis is challenging to treat because the bacterium is resistant to most antibiotics available.
- Clostridium difficile infects large intestine and cause Clostridium difficile-induced colitis, an infection that causes intestinal inflammation and severe diarrhea.
- Severe, chronic, or untreated cases of C-difficile-induced colitis can lead to death.

Certain drugs and thiers specific adverse effects

- Acute liver injury secondary to prolonged therapy with Amoxicillin plus Clavulanic acid.
- Fluoroquinolone – posssess CNS effects like headache, dizziness, and light-headedness.
- Doxycycline and Clindamycin can cause esophageal ulcerations and strictures.
- Ciprofloxacin – may evoke epileptic attacks.
- Amino glycosides – light headedness, vertigo, malfunction of the inner ear, nausea, nystagmus, renal toxicity
- Trimethoprim and sulfamethoxazole induces hyperkalemia and blood dyscrasias.

How to avoid antibiotic misuse

Ways to help reduce the risk of developing antibiotic-resistant infections include:

- Take prescribed antibiotics as per norms
- Even if symptoms subsides, do not discontinue antibiotic before completion of course
- Never take antibiotics prescribed to someone else
- Take them exactly as your provider has prescribed.
- Do not save antibiotics for later.
- Do not consume antibiotics that are expired or old
- Do not take antibiotics for cold or flu symptoms.
- Only using antibiotics when necessary for bacterial infections
- Talking with a doctor about alternatives to antibiotics
- Avoiding use of antibiotics frequently or for extended periods unless necessary
- Never break up or crushing antibiotic pills or tablets – it reduces its efficiency
- Avoiding dairy, fruit and fruit juices, and alcohol for 3 hours after taking an antibiotic dose – it delays gastric absorption

Help fight antibiotic resistance by taking simple steps to prevent the spread of infections. Encourage hand washing, make sure your children receive proper and timely immunization, and keep kids out of school when they're sick.

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