

# GENERAL HEALTH INFORMATION

## WHAT CAUSES FEVER?

Many people confuse the action of antibiotics (medication which acts on biological organisms) such as penicillin and tetracycline, with the effect of antipyretics (medication which acts to reduce fever), such as aspirin or acetaminophen. An antipyretic drug lowers fever and often is a mild pain reliever. Contrary to popular belief, fever is not synonymous with infection. Another complicating fact is that the majority of infections in ambulatory patients are caused by viruses that are not responsive to treatment with antibiotics. Only when fever is caused by bacteria is an antibiotic expected to have a beneficial effect on the course of illness, by interfering with multiplication of the causative bacteria.

## WHAT ARE VIRUSES?

Viruses are submicroscopic particles that infect living cells throughout the plant and animal kingdom. Laboratory isolation requires expensive and time consuming tissue culture methods. Although recent advances have been made in understanding viruses, there is still much to be learned. At present, it is known that over 200 known virus strains cause upper respiratory infections (URI's), which include sinusitis, pharyngitis or sore throat, laryngitis, and bronchitis. Because viruses lack a cell wall, and live and multiply within tissue cells, antibiotics are totally ineffective in treating infections caused by them. Several antiviral compounds are currently under experimental investigation around the world, but none are currently available for widespread use of the treatment of URI's.

## WHAT ARE BACTERIA?

Bacteria are larger than viruses. Many strains exist, and can be seen under the microscope by special staining techniques. Bacteria have cell walls, can survive outside living cells, and can be cultured at reasonable cost on material containing necessary nutrients. Some common illnesses caused by bacteria are tuberculosis, "strep" throat, "boils", and gonorrhea. Other conditions such as pneumonia, bladder infections, and gastroenteritis can be caused by either viruses or bacteria. To differentiate the causative microorganism in these cases, the health care professional relies most on certain clinical findings. Screening bacterial cultures may also be done. If these cultures are negative for disease-causing bacteria, this implies that the cause is viral.

## WHY DO THEY DO THROAT CULTURES?

The throat swab for isolating the strep bacteria is the most commonly used bacterial culture. About 5% of the population can develop a potentially serious complication following a strep infection. Examples of these complications are rheumatic fever, which can affect the heart, and nephritis, which can cause kidney damage. Since these complications can be prevented by treatment of the initial strep infection with an antibiotic (usually penicillin), the evaluation of a sore throat (URI) usually includes a throat swab to look for strep. It takes 48 hours for the strep bacteria to grow, so the throat culture must be held two days before it can be interpreted as positive or negative for strep. The Health Center can perform rapid strep testing when warranted by staff.

## WHAT ARE ANTIBIOTICS?

Antibiotics are commonly prescribed drugs in this country. Infectious disease experts are concerned that antibiotics are over prescribed. Their concern centers on the following:

~Certain bacterial strains gradually become resistant to antibiotics and pose a very serious problem to both patient and physician. For example, some strains of the gonorrhea bacterium have become quite resistant to penicillin; increasing resistance is expected in the future.

~ Antibiotics are not harmless drugs. Serious allergic reactions are caused in a small proportion of the population by antibiotics. They can also affect the normal bacteria of the body, causing an ecological imbalance that can result in further illness. The most common such problems, encountered are vaginitis and diarrhea.

~ Antibiotics tend to be expensive. It is a waste of money to take antibiotics for viral illnesses when it is known that antibiotics are ineffective against viruses.

## SOME DO'S AND DON'TS CONCERNING ANTIBIOTICS

DO inform a health care provider about any confirmed or suspected antibiotic (or other drug) allergy or adverse reaction.

DO take antibiotics only on order of a health professional.

DO take antibiotics according to the instructions on the bottle and for the full period of time specified.

DO contact a health care provider if side effects develop while taking antibiotics.

DO discard any unused or leftover antibiotics

DON'T stop taking an antibiotic after three to four days because temporary relief occurs, Since relapses are possible if bacterial infections are only partially treated.

DON'T share antibiotics with friends who have a similar illness. A single dose of an antibiotic can invalidate subsequent bacterial cultures for as long as 48 hours.

DON'T self-prescribe or rely on friends to prescribe antibiotics. Consult a health care professional.

DON'T forget to provide the health care professional with personal background information, such as allergies, to certain medication.

## WHAT ABOUT A VIRAL URI?

Primary treatment of a viral URI is waiting, or “tincture of time”, while the immune system of one’s body eradicates the invading virus. Most URI’s take 10 to 14 days to resolve, but some stubborn ones may last four to six weeks. Various symptomatic remedies may provide comfort while one is waiting. For example, hot salt-water gargles and lozenges for the throat, or acetaminophen or Ibuprofen for fever or pain, rest and mild decongestants may help. If fever worsens or new symptoms develop, such as earache, sinus tenderness, or chest pain, reevaluation by a health care professional for possible secondary bacterial infection is advisable. If the physician then suspects a bacterial infection, an antibiotic will probably be prescribed.

## WHERE CAN I GET FURTHER INFORMATION?

Further questions can be answered by your Health Center. That is why it is there.

## FOOD FOR THOUGHT:

“There is only one way to treat a cold, and that is with contempt”. (Dr. William Osler)

“It takes about two weeks of treatment to cure a cold; but without treatment it takes about fourteen days”. (Old European maxim)

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