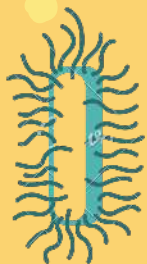
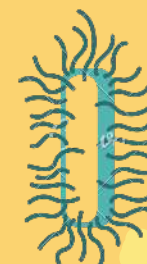


Superheroes



Against



Superbugs



AUGUST 2018



HOW DO ANTIBIOTICS WORK?

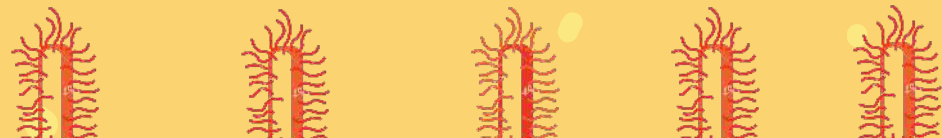


1

By killing bacteria

2

By stopping
bacteria from
growing





DAAL MEIN KUCH
KAALA HAI!

WHEN ANTIBIOTICS DONT WORK?



DAAL MEIN KUCH KAALA HAI!



Patient
Name him/her



Bugs



Antibiotic

DAAL MEIN KUCH KAALA HAI!



Patient



Good Bacteria
in the gut
(microbiome)



Antibiotic

DAAL MEIN KUCH KAALA HAI!



Patient



Viruses



Antibiotic

DAAL MEIN KUCH KAALA HAI!



Patient



Superbug



Antibiotic



DAAL MEIN KUCH KAALA HAI!

1

Important to take all doses of antibiotics prescribed. No misuse of antibiotics!

2

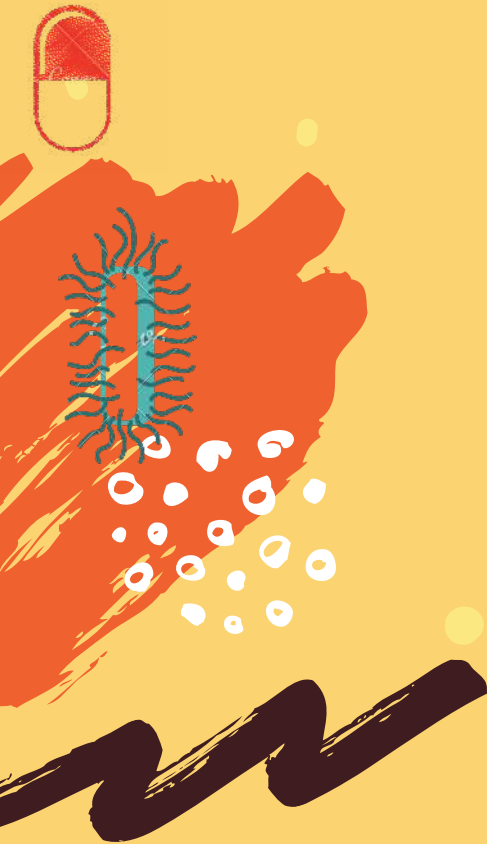
Antibiotics indiscriminately kill some of the good gut bacteria also. Taking Probiotic food while taking antibiotics helps!

3

Antibiotics do not kill viruses. Taking antibiotics for viral infections does more harm than good!

4

Bacteria can turn into superbugs, fighting off the effect of antibiotics on them. Superbugs are very hard to treat!





How it happens

BUGS TO SUPERBUGS





BUGS TO SUPERBUGS



1

Bugs become superbugs through the process of evolution

2

Evolution is a natural process

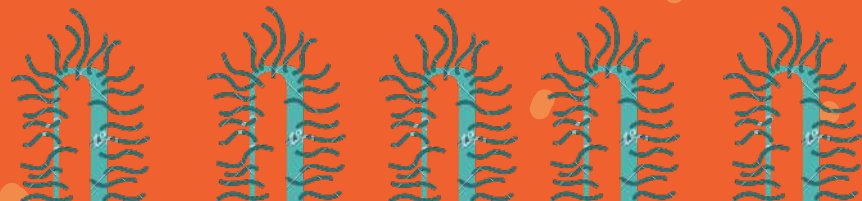
3

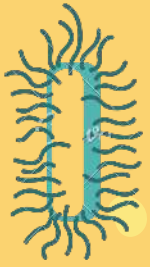
But by misusing and overusing antibiotics, we are helping superbugs to evolve faster!



BUGS SWAP POWERS!

Spread of Superbugs





BUGS SWAP POWERS!



1

Bugs have the superpower to exchange genes

2

Bugs can acquire new genes through conjugation

3

This helps bugs turn into superbugs by acquiring antibiotic resistance genes from other superbugs nearby



SUPERBUG BABIES

Spread of Superbugs



Patient



Antibiotic



bugs



Superbugs



SUPERBUG BABIES



1

Populations of bugs can change into superbugs very quickly

2

This is due to their ability to multiply really quickly and adapt to new antibiotics

3

Stopping antibiotics mid-course will lead to more and more superbugs



WHY ARE SUPERBUGS A PROBLEM?

- Antibiotics stop working, treatments become more expensive, infections can take longer to treat
-
- Even minor infections can kill
- Surgeries, chemotherapy, childbirth etc..can be life threatening
- Compounded by the fact that there are no new class of antibiotics in the pipeline
-
- Problem requires each one of us to act and become a superhero against superbugs





**ONE MORE STEP CLOSER TO BECOMING
A SUPERHERO AGAINST SUPERBUGS**

