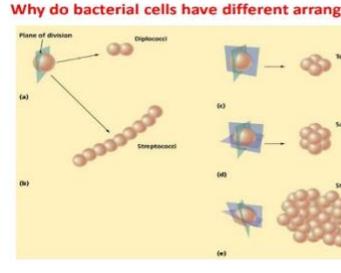
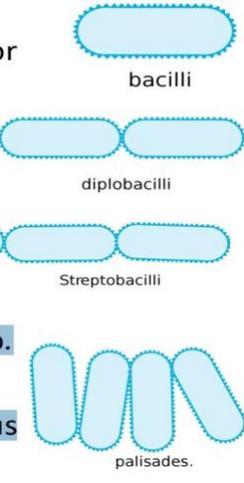
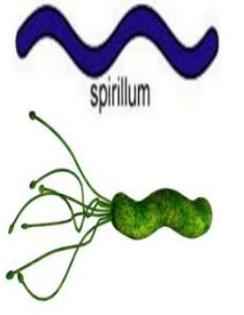
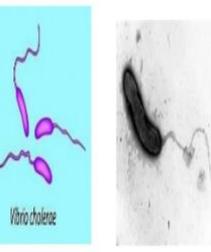


From where	1. Spherica/Cocci	2. Rod Shaped Bacteria or Bacillus	3. Spiral or Helical	4. Vibrio or Coma	5. Spirochaeta
Char	<ul style="list-style-type: none"> • Cocci has originated from a greek word; kokkos = seed. • (0.5μ -1.25μ in diameter) 	<ul style="list-style-type: none"> • From greek word, bacillii means rod or stick. • There ends are rounded flat or pointed. • 0.5-1.2μ in diameter and 3- 7μ in length. • Flagellated or non-flagellated. 	<ul style="list-style-type: none"> • From greek word; spira means coiled. • A single spirillum has more than one turn of helix. • 10-50μ in length and 0.5 - 3μ in diameter. • They are flagellated 	<ul style="list-style-type: none"> • They bear flagella at their end. • 1.5-1.7μ in diameter and upto 10μ in length • e.g. Vibrio cholarae. 	<ul style="list-style-type: none"> • These bacteria appears like a corkscrew and atrichous. • Their length is more as compared to their diameter. • Their body is more flexible.
Types	<p>a. Micrococci: appears singly.</p> <p>b. Diplococcus: appear in a pairs of cells.</p> <p>c. Streptococci: appear in rows of cells or in chains.</p> <p>d. Staphylococci: arrange in irregular clusters like bunches of grapes e.g. Staplylocolls aureus.</p> <p>e. Tetracoccus: arrange in a sequence of four.</p> <p>f. Sarcinae: arrange in cuboidal or in a different geometrical.</p>	<p>✓ Monobacillus: arrange singly.</p> <p>✓ Diplobacillus: present in a group of two.</p> <p>✓ Streptobacillus : in chains.</p> <p>✓ Palisade: Very rarely the bacillus arrange in a palisade arrangement.</p>			
Photo	<p>Shapes and Forms of Bacteria</p> <p>SPHERES (COCCI)</p>  <p>Why do bacterial cells have different arrangement</p> 	<p>or</p> 			

From where	Flagella	Pili	Fimbriae
Char	<ul style="list-style-type: none"> • They are flexible, whip like appendage (singular flagellum). • Measures 4-5 μ long. • They are made up of protein flagellin (MWt , 40,000) • The location of flagella varies in various bacteria. • Ultrastructure of flagellum : Each bacterial flagellum is structurally differentiated into three parts: <ul style="list-style-type: none"> • basal body. • Hook . • Main filament or shaft. • Flagella stain <ol style="list-style-type: none"> 1- Rosanalin dye 2- Silver nitrate + ferric tannate 	<ul style="list-style-type: none"> • These are hair like appendages present on the surface of most of the gram negative bacteria. • They are smaller than flagella, have no role in the motility of bacteria. • A single bacterial cells bears about 100-500 pili which are arranged peritrichously. • There origin is from cytoplasm and penetrate through the peptidoglycan layers of the cell wall 	<ul style="list-style-type: none"> • A fimbria is a short pilus that is used to attach the bacterium to a surface. They are sometimes called "attachment pili". • Fimbriae are either located at the poles of a cell, or are evenly spread over its entire surface.
Types	<p>Types of Bacterial according to numbers of flagella:</p> <ul style="list-style-type: none"> • atrichous: The bacteria which lack flagella are referred <p>Bacteria can be divided into following types based on the the location of flagella.</p> <ul style="list-style-type: none"> • Monotrichous • Peritrichous • Amphitrichous • Lophotrichous <p>Types of Bacterial Motility: Flagellated: types of rotation by flagella</p> <ol style="list-style-type: none"> A- Peritrichous B- Polar: <ul style="list-style-type: none"> - Polar reversable flagella - Polar unidirectional flagella 	<p>1- Somatic pili :</p> <ul style="list-style-type: none"> • Each bacterial cell bears about 100 somatic pili. • Function: is to help the bacterium for attachment to a substratum. <p>2- sex pili or conjugate pili:</p> <ul style="list-style-type: none"> • known as F pili. • Function: Allow the transfer of DNA between bacteria, in the process of bacterial conjugation. This can result in dissemination of genetic traits, such as antibiotic resistance, among a bacterial population. 	