

Bacteria Wiki

Learning Objectives:

1. Recognize key characteristics of human pathogens.
2. Compare pathogenesis mechanisms between species and find similar patterns vs. unique features.
3. Independently research a topic and be able to summarize what you find.
4. Communicate information efficiently and accurately.

We have been talking about some prevalent and important pathogens and pathogenesis mechanisms in class so far, now let's take a look at some less common pathogens, and see how they utilize some of the same mechanisms (and some unique ones!) to cause disease in humans. As a class, we are going to create a database of some less common human pathogens and highlight the interconnectedness of their mechanisms:

Week 1 - Part 1 (Group of 3-4):

You will be assigned a group. Your group will sign up (first-come-first-serve) for one of the microbes on the list provided. You will create a Wikipedia-style page using the template provided, with brief written explanations of:

- Gram-staining and morphology
- Disease & characteristic symptoms
- Key virulence factors
- Treatment/Prevention

You must include:

- At least 1 microscopy image of the microbe (can be a Gram-stain, or electron micrograph)
- At least 1 additional visual aid (can be a photo, diagram, flow chart, etc – made by you or with source cited)
- All sources must be cited and include a clickable link

Your group must ALSO submit:

- 2 multiple choice quiz questions regarding the content of your page:
 - 1 straightforward fact-based question (to assess foundational knowledge)
 - 1 question providing a 1-3 sentence case stem and asking for a diagnosis (to assess application of the information)

Please limit web pages to approximately 500 words.

Week 2 - Part 2 (Individual):

In addition to the outline on each group's wiki page, I will include links to key concepts relevant to that pathogen (and possibly others) that must be included by name in the pathogen pages from part 1, but detailed explanations should NOT be included on pathogen pages.

Instead, individuals will claim one of these linked pages to fill in further explanation on a separate wiki page.

- On these pages, I will provide guiding questions or outlines.
- You must include at least 1 helpful visual aid (one you made or it must be cited).
- Again, cite all your sources with clickable links.
- Compare and contrast to at least 1 topic covered in class and cite which lecture (for example, if your topic is “superantigens” you should reference *Staphylococcus aureus* and Group A Strep from in-class lectures.)

You must ALSO send me 1 multiple choice quiz question regarding your topic.

Keep pages short, no more than 400 words, ideally less than that.

(If there is a topic you would like to cover, but I did not highlight and create a page for it, let me know and I may add it.)

Week 3 - Part 3 (Individual):

Everyone will receive a compiled copy of all the quiz questions generated (they will not necessarily be in order). You will read through the pages generated by other groups to find the answers to each other's questions. (Pay attention to these – I will choose a handful to include on your exam!)

This quiz will also include a short-answer question from me, asking you to find common themes between the survival and virulence strategies of these pathogens, or if you do not find commonalities, why that may be given what you know about bacterial life.

This quiz will also include a short reflection question regarding the usefulness and limitations of a medium like a wiki to organize and communicate information (from either the student's personal perspective, or speaking more generally).

Web 2.0 Assignment – Bacteria Wiki

Week 1 – Part 1 (group) (25pts)				
	Strong (5pts)	Satisfactory (4pts)	Developing (3pts)	Incomplete (0pts)
Content	All required information is included, thoroughly explained, and accurate. Demonstrates an excellent understanding of the pathogen.	All required information is included and is mostly accurate with only minor errors.	Most required information is included, but important details are missing or some information is inaccurate.	
Sources	Multiple reliable sources are used and cited correctly in a consistent format.	Reliable sources are used and citations are mostly correct.	Limited or questionable sources are used, or citations contain several errors.	
Writing	Writing is exceptionally clear, well organized, grammatically correct, and easy to read.	Writing is clear and mostly free of grammar or spelling errors.	Writing is understandable but contains frequent grammar, spelling, or organization issues.	
Visual Aid	Visuals are relevant, high quality, and clearly enhance understanding of the pathogen.	Visuals are relevant and support the content with minor weaknesses in clarity.	Visuals are somewhat relevant or only partially support the content.	
Quiz	Quiz questions are accurate, relevant, clearly written, properly formatted, and effectively assess understanding.	Quiz questions are mostly accurate, relevant, and clearly written.	Several parts of quiz questions are unclear, inaccurate, or improperly formatted.	

Web 2.0 Assignment – Bacteria Wiki

Week 2 – Part 2 (individual) (30pts)				
	Strong (5pts)	Satisfactory (4pts)	Developing (3pts)	Incomplete (0pts)
Integration	Effectively incorporates relevant examples from lecture material, which enhance explanations.	Relevant lecture material is mentioned but connections are limited or not fully developed.	Minimal, unclear, or inaccurate connections to class lecture material.	
Content	All required information is included, thoroughly explained, and accurate. Demonstrates an excellent understanding of the pathogen.	All required information is included and is mostly accurate with only minor errors.	Most required information is included, but important details are missing or some information is inaccurate.	
Sources	Multiple reliable sources are used and cited correctly in a consistent format.	Reliable sources are used and citations are mostly correct.	Limited or questionable sources are used, or citations contain several errors.	
Writing	Writing is exceptionally clear, well organized, grammatically correct, and easy to read.	Writing is clear and mostly free of grammar or spelling errors.	Writing is understandable but contains frequent grammar, spelling, or organization issues.	
Visual Aid	Visual is relevant, high quality, and clearly enhances understanding of the pathogen.	Visual is relevant and supports the content with minor weaknesses in clarity.	Visual is somewhat relevant or only partially supports the content.	
Quiz	Quiz question is accurate, relevant, clearly written, properly formatted, and effectively assesses understanding.	Quiz question is mostly accurate, relevant, and clearly written.	Quiz question is partially unclear, inaccurate, or improperly formatted.	

Web 2.0 Assignment – Bacteria Wiki

Week 3 – Part 3 (individual) (10pts)				
	Strong (5pts)	Satisfactory (4pts)	Developing (3pts)	Incomplete (0pts)
Short-answer	Answer demonstrates a strong understanding of common mechanisms or biological reasoning for	All required information is included and is mostly accurate with only minor errors.	Most required information is included, but important details are missing or some information is inaccurate.	
Quiz	Complete (4pts)	Incomplete (0pts)		
Reflection	Complete (1pt)	Incomplete (0pts)		

Bonus Points (Individual) (Max 3pts):

- Comments will be available to you to respond to the pages written by your peers.
- Let them know something specific you appreciate about their page.
- Let them know (respectfully!) if you notice an error or have constructive criticisms.
- Up to 3 pts, 1 pt per substantial comment (beyond “good job!”)