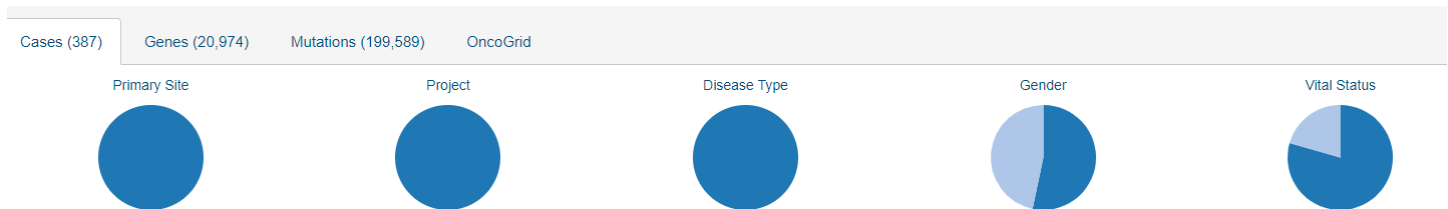


Explore TCGA

Open the TCGA GDC Data Portal: <https://portal.gdc.cancer.gov/>

1. In Table 1 note the number of cases, genes and mutations for the entire site
2. Click on “Colorectal” from the image on the right
3. In Table 1 note the number of cases, genes and mutations for Colorectal cancer
4. Using filters on the left select:
 - a. Primary site - colon
 - b. Program - TCGA
 - c. Project - TCGA-COAD
 - d. Disease type - Adenomas and Adenocarcinomas
5. Observe the circles in the center white section, what are they depicting? Write your explanation here.

Should look like this:



6. In Table 1 note the number of cases, genes and mutations for this filtered data set
7. Click on the “Genes” tab
8. In Table 2 note the top 4 mutated genes (bar graph) for this filtered data set
9. Hover over each gene bar and note in Table 2 the % of affected cases per gene
10. Hover over the survival graph and note in Table 2 % survival at 5 & 10 years
11. On Left filter for males and complete Tables 1 & 2
12. Filter for females and complete Tables 1 & 2
13. Discuss with your partner differences in survival rates over time and among the groups. Does this match what you learned previously about colon cancer incidence among males and females? Does any of your data provide rationale for these differences? Write your responses here.

14. What additional information would you want/need to know to understand this difference? Explore the portal, does this information exist here? Differences thought to be due to lifestyle & behavior differences

- females are more likely to get screened and tend to eat less red meat

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6149054/>

Table 1:

	Cases	Genes	Mutations
Entire Database	34,893	22,827	3,142,246
Colorectal Cancer	2,755	21,244	346,794
Total Filtered Data Set	387	20,974	199,589
Male Filtered Data Set	205	20,545	91,837
Female Filtered Data Set	180	20,727	110,768

Table 2:

	Total Filtered Data Set		Male Filtered Data Set		Female Filtered Data Set	
	Genes	% Affected Cases	Genes	% Affected Cases	Genes	% Affected Cases
Top 4 Mutated Genes	APC	68%	APC	69%	APC	67%
	TTN	54%	TTN	53%	TTN	55%
	TP53	53%	TP53	52%	TP53	54%
	KRAS	37%	KRAS	38.5%	KRAS	35.6%
5 year survival rate	60%		50%		70%	
10 year survival rate	43%		15%		61%	

Explore OncoKB

Open OncoKB: <https://oncokb.org/>

1. Use Onco KB to identify the following

	APC	TP53	KRAS
Is this gene a TS or O?			
What is the function of this gene?			
What does the gene initials stand for?			
Where is this gene located?			
Is targeted treatment available for mutations in this gene? Name the drug(s)			
Is this drug FDA approved?			
If a drug is available, then using Google, describe how the drug works.			