

**FAST FACT AND CONCEPT #99
CHEMOTHERAPY: RESPONSE AND SURVIVAL DATA**

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Background Key data in the decision process regarding chemotherapy include the response rate, median duration of response, and median survival, along with toxicity and quality of life information (see *Fast Fact #14*). The table below synthesizes data for several common cancers. The data were derived by reviewing standard oncology textbooks, along with a Medline search of recent relevant articles.

Comments on the Response and Survival Data

- All data is for patients receiving **first-line**, commercially available, oral or IV chemotherapy and/or biological therapy (e.g. monoclonal antibodies).
- 'Response Rate' is defined as the percentage of complete and partial responders in a given trial, where 'Partial Response' = $\geq 50\%$ reduction in measurable tumor for one month.
- Response is typically determined after 2 cycles of treatment (usually one cycle every 21-28 days). Note: patients who progress after 1 cycle will generally continue progressing after two.
- The data reflect mid-point ranges derived from the available clinical trials; most of the data represent combination chemotherapy trials. Note: for certain cancers, the benefit of combination vs. single agent therapy is not proven (e.g. pancreas, biliary, liver).
- This information is not representative of all cancer patients. The data represent the 'best case' outcome, from a population of patients who were in good enough health to participate in a clinical trial (e.g. ambulatory, good functional status). Actual responses and response durations for a non-clinical trial population will likely be poorer.
- Second-line chemotherapy, following disease progression from first-line treatment, can be expected to have a lower response rate and shorter duration of response.
- Median survival data includes both responders and non-responders. Note: patients who respond to chemotherapy typically live longer than those who do not.

	Response Rate	Median Duration of Response	Median Survival
Breast	25-55%	8-12 months	24-36 months
Lung (Non-Small Cell)			
NSCLC, squamous	20-36%	4-6 months	6-11 months
NSCLC, non-squamous	20-35%	4-6 months	10-12 months
Esophagus	30-50%	4-6 months	6-9 months
GEJ	40-60%	6-8 months	9-12 months
Gastric			
HER2 negative	20-40%	4-7 months	6-11 months
HER2 positive	~50%	6-7 months	12-14 months
Pancreas	20-32%	4-6 months	8-11 months
Liver (Hepatocellular-HCC)	25-40%	2-5 months	
Non Hepatitis C related HCC			6-10 months
Hepatitis C related HCC			14 months
Biliary (Cholangiocarcinoma)	20-35%	4-8 months	9-14 months
Colon	30-45%	8-10 months	16-21 months

Melanoma	15-40%	4-14 months	6-15 months
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References

1. DeVita, Hellman, and Rosenberg. *Cancer: Principles and Practice of Oncology*. 10th Edition. Philadelphia, PA: Lippincott Williams & Wilkins; 2014.
2. Waun Ki Hong, et al, eds. *Holland-Frei Cancer Medicine*. 8th Edition. Hamilton, Ontario: BC Decker; 2010.

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