

# The Update on the Gastroesophageal Cancer Care and Research at OSU

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Assistant Professor  
Department of Medical Oncology

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WEXNER MEDICAL CENTER

Creating a Cancer-free World.  
One Person, One Discovery at a Time.

# Gastrointestinal Medical Oncology at OSU



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Section Chief, GI Oncology



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Assistant Professor



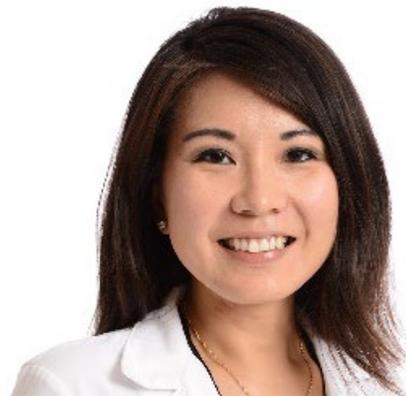
John L. Hays, MD, PhD  
Associate Professor



Ning Jin, MD, MS  
Assistant Professor



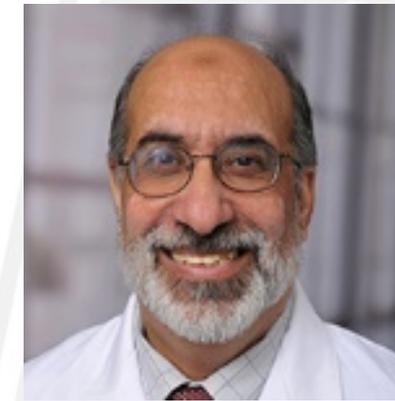
Sameek Roychowdhury, MD, PhD  
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Assistant Professor



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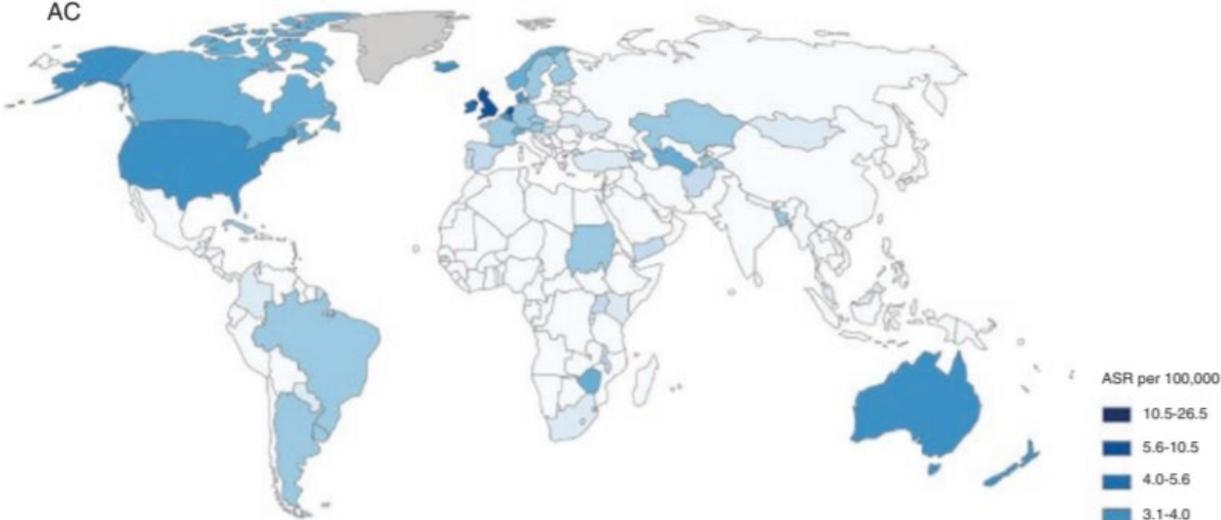
# Goals

- Incidence and Survival of Gastroesophageal Cancers
- The Diagnostic Process of Gastroesophageal Cancers
- Treatment of Localized Esophageal and Esophagogastric Junction (GEJ) Cancers
- Treatment of Localized Gastric Cancer
- Ongoing Research for Gastroesophageal Cancers at James
- Treatment of Metastatic Gastroesophageal Cancers

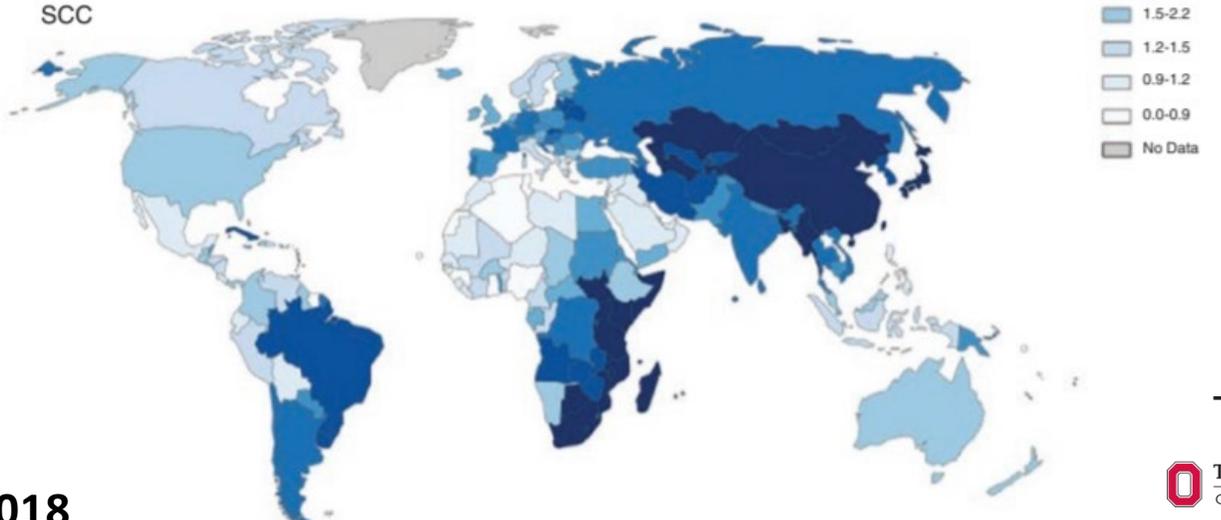
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# Age Standardized Incidence Rate of Esophageal Adenocarcinoma & Squamous Cell Carcinoma in Men

Adenocarcinoma



Squamous Cell Carcinoma

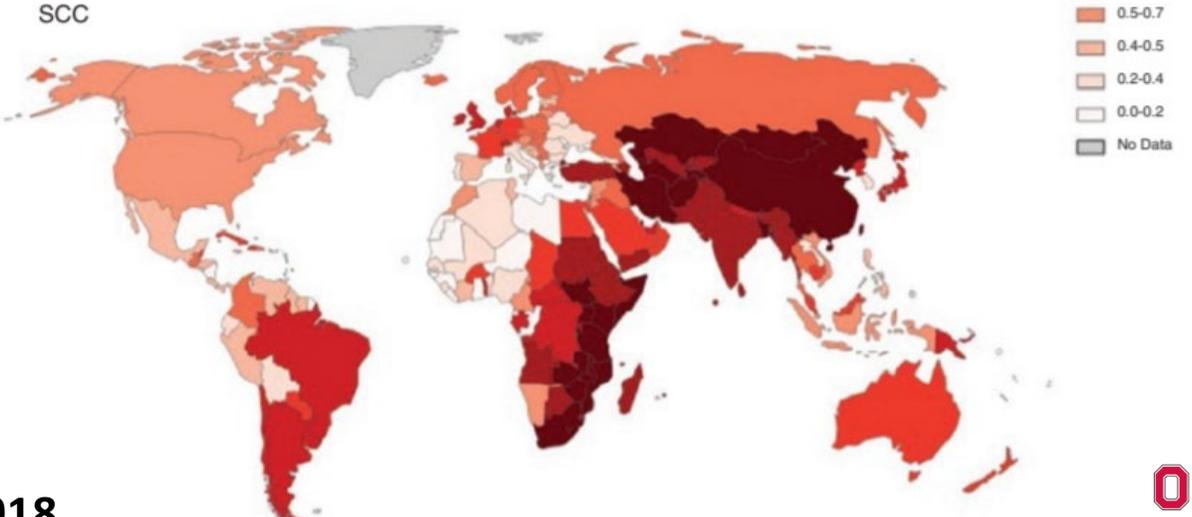


# Age Standardized Incidence Rate of Esophageal Adenocarcinoma & Squamous Cell Carcinoma in Women

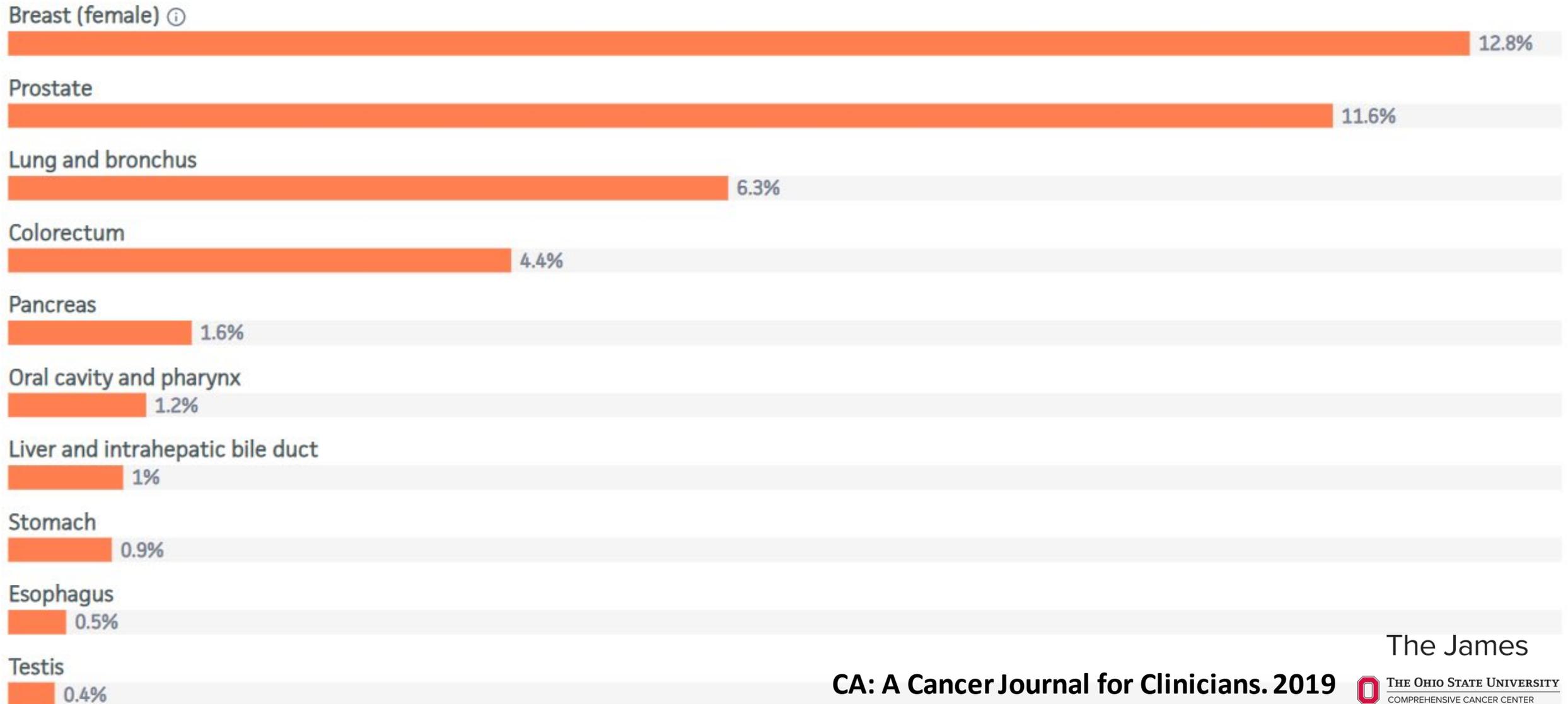
Adenocarcinoma



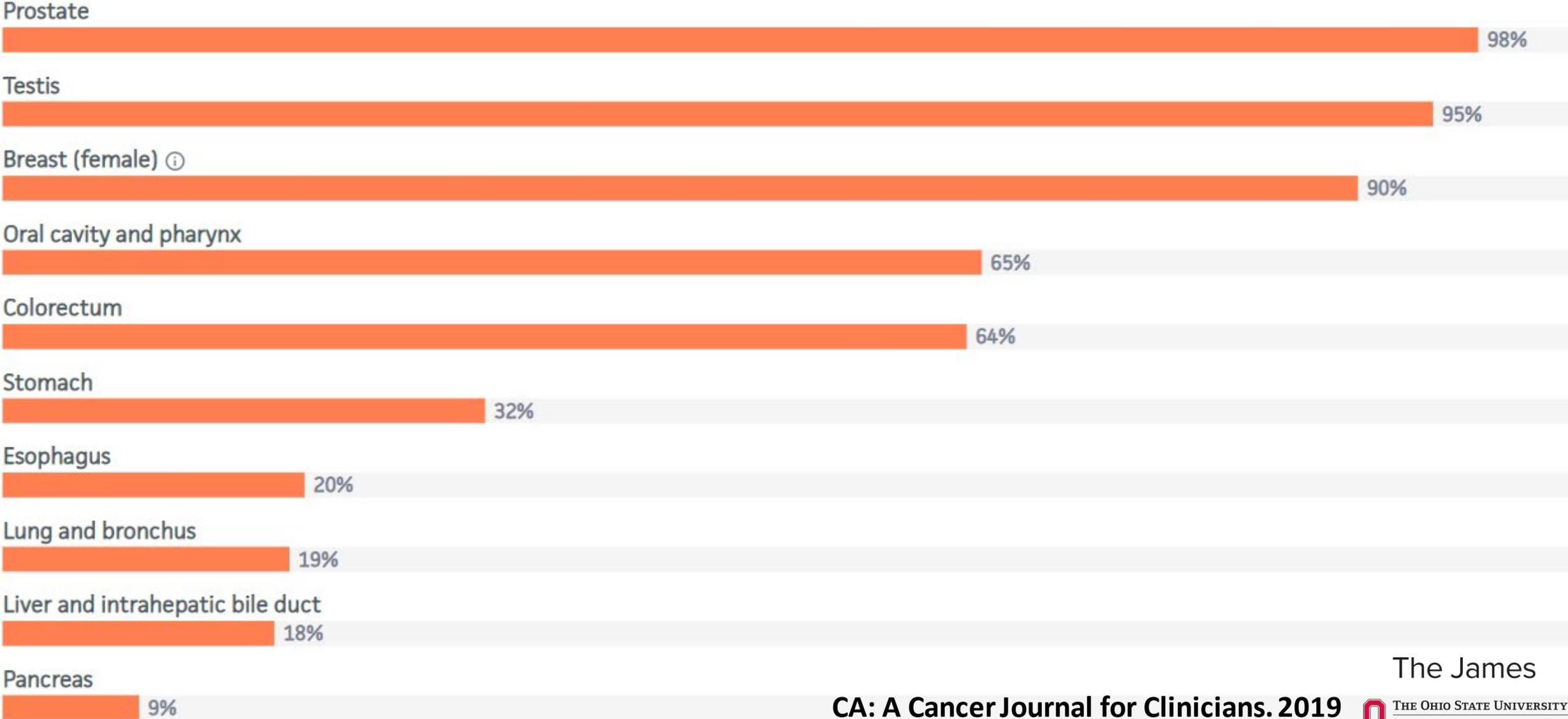
Squamous Cell Carcinoma



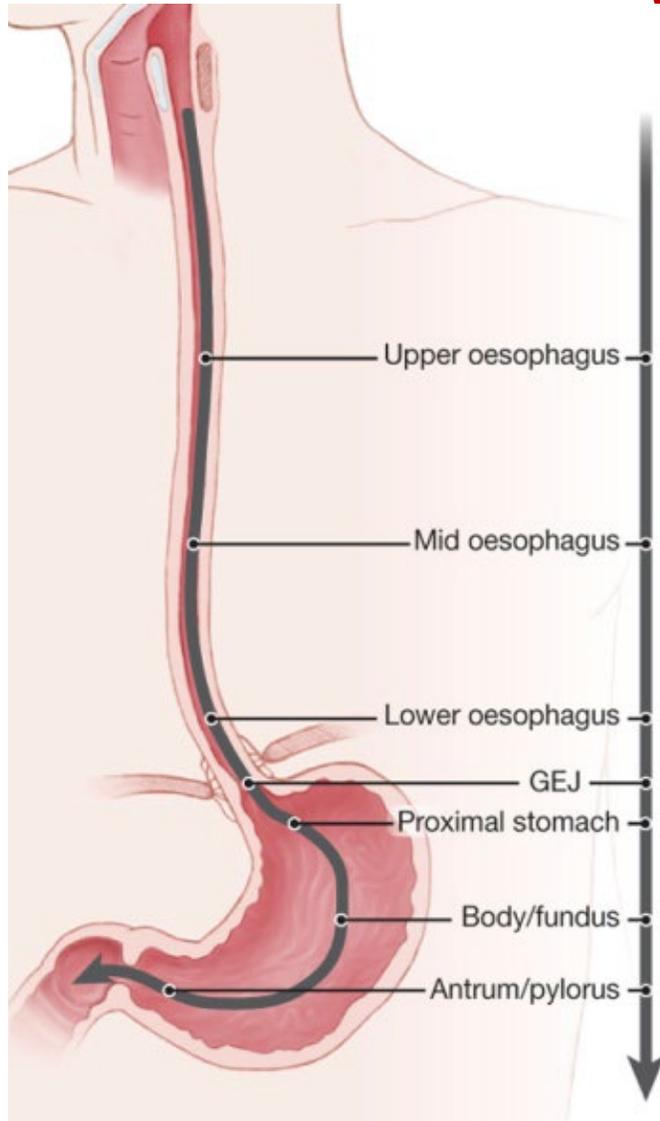
# Probability of Developing Cancer (2014-2016) in the United States



# Five-year relative survival (2009-2015) in the United States



# The Diagnosis of Esophageal, Gastroesophageal Junction (GEJ) and Gastric Cancers

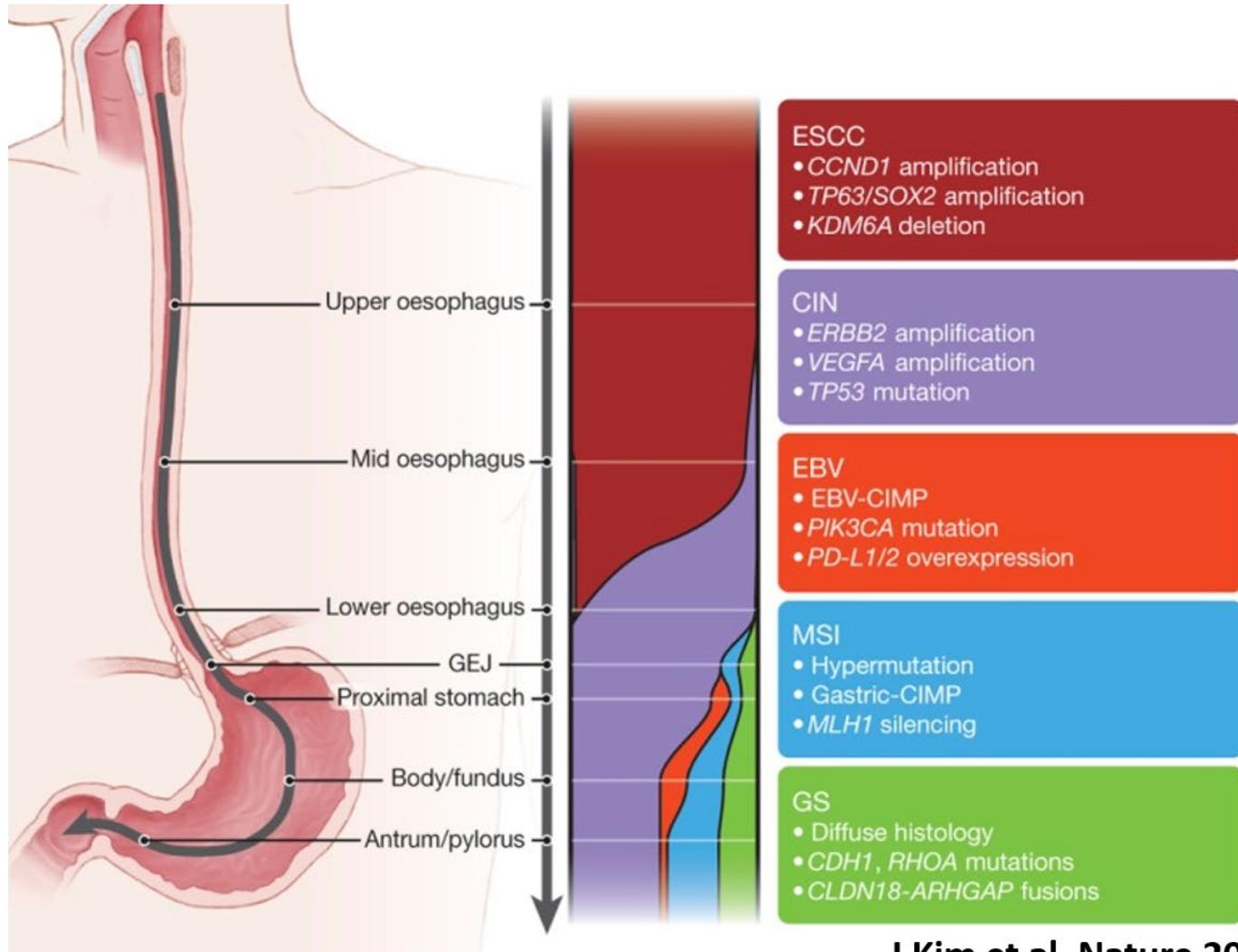


Accurate staging is essential:

- ✓ EGD with biopsy
- ✓ Endoscopic Ultrasound for tumor (T) and nodal (N) staging
- ✓ PET scan to rule out disease spreading (M)
- ✓ Laparoscopic exam to rule out disease spreading to the peritoneum

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# Gastroesophageal Cancer Molecular Subtypes



Squamous Cell Carcinoma

Adenocarcinoma

J Kim et al. Nature 2017

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# Current Treatment for Esophageal and GEJ Cancers in the US

cT1 N0

Endoscopic resection +/- ablation;  
Esophagectomy

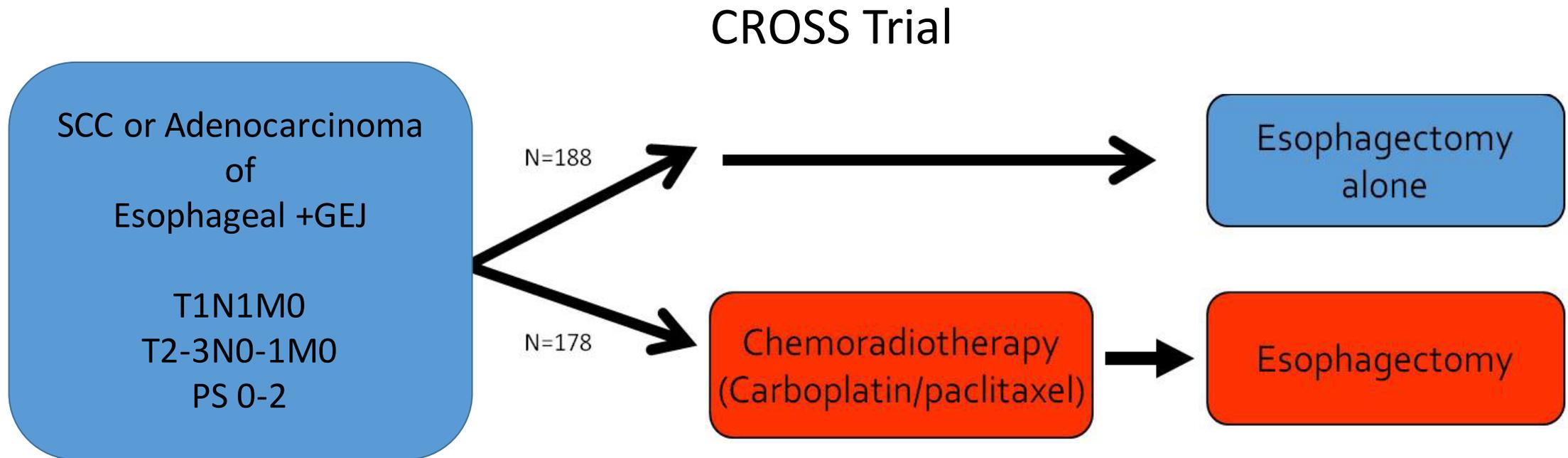
cT2-3 or any  
nodal positive

Concurrent chemotherapy  
with radiation

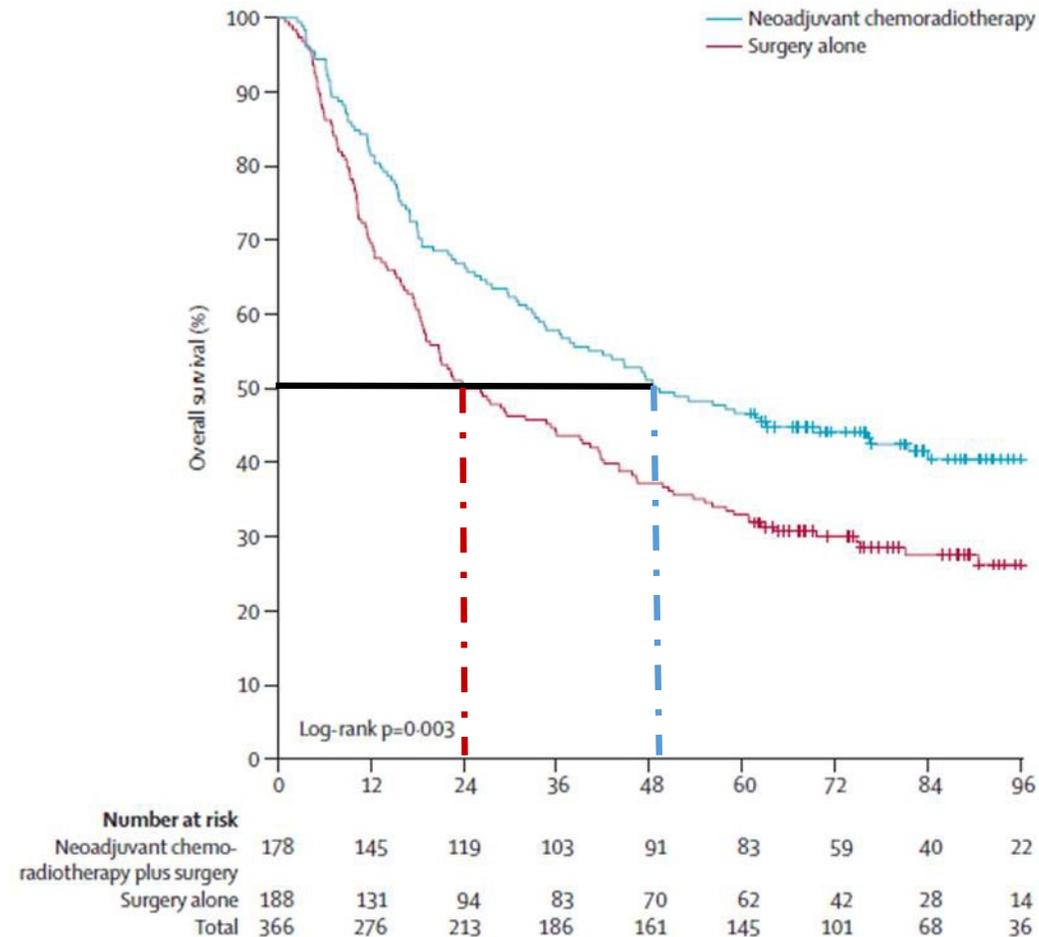


Surgery

# Standard of Care for Esophageal and Gastroesophageal Junction (GEJ) Cancers: Preoperative Chemoradiation



# Overall Survival for Patients with Locoregional Esophageal and GEJ Cancers: Preoperative Chemoradiation



Van Hagen et al. NEJM 2012; Shapiro et al. Lancet Oncology 2015

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# Ongoing Clinical Trials: How Can We Improve the Treatment for Patients with Esophageal or GEJ Adenocarcinomas Who Are NOT Surgical Candidates?

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# Phase I Trial with Expansion Cohort of OBP-301 (Telomelysin™) and Definitive Chemoradiation for Patients with Locally Advanced Esophageal and Gastroesophageal Adenocarcinoma Who Are Not Candidates for Surgery



Dr. Eric Miller  
Radiation Oncology



Dr. Terence Williams  
Radiation Oncology



Dr. Ning Jin  
Medical Oncology



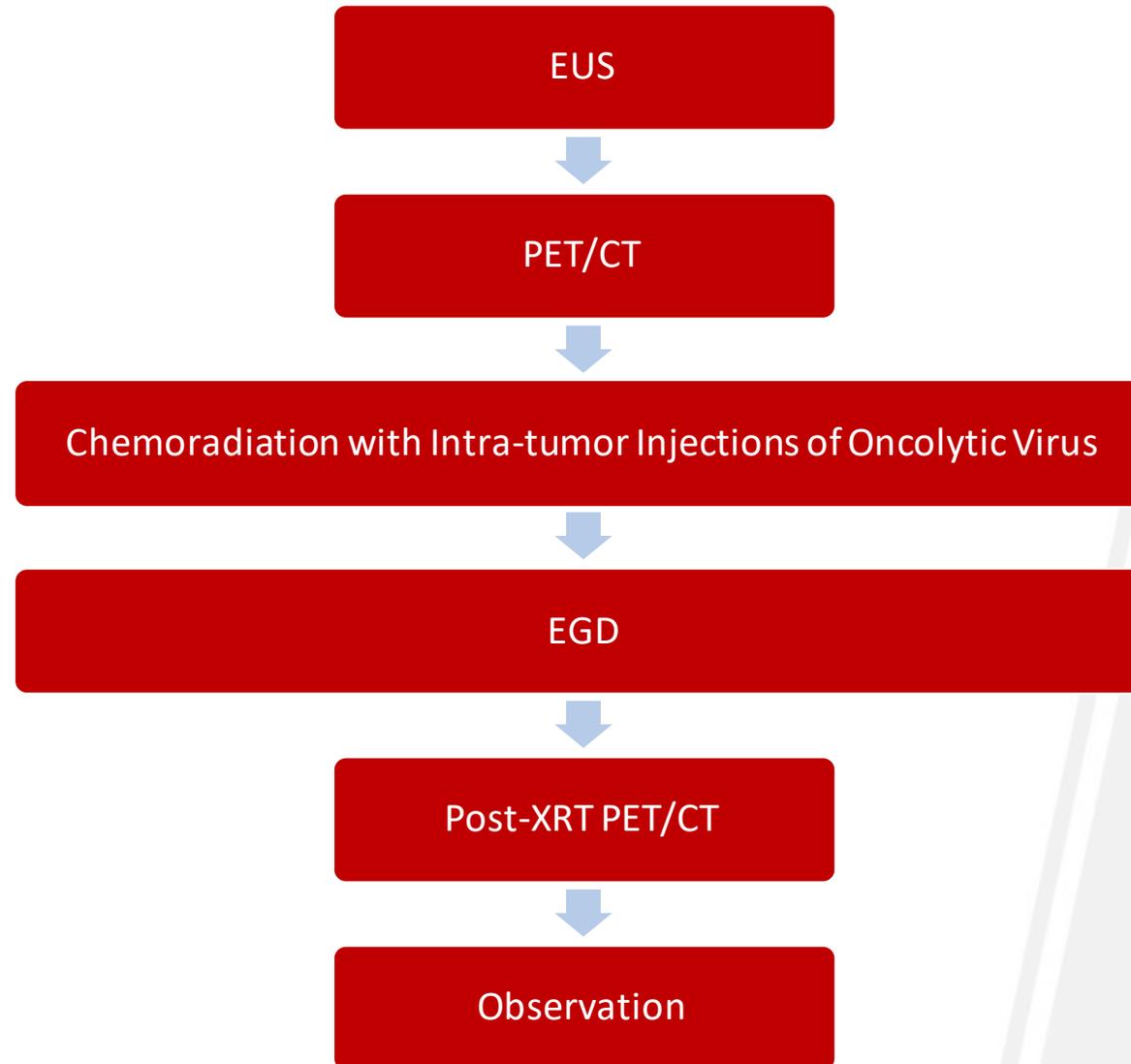
Dr. Georgios Papachristou  
Gastroenterology

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## Rationale: Phase I Trial with Expansion Cohort of OBP-301 and Definitive Chemoradiation for Patients with Locally Advanced Esophageal and GEJ Adenocarcinoma Who Are Not Candidates for Surgery

- Oncolytic immunotherapy employs viruses that are designed to preferentially lyse cancer cells and trigger anti-tumor immunity.
- In OBP-301-003-CV (OBP-301 + Radiation phase I/II study), OBP-301 was combined with radiation in Japanese esophageal cancer patients who were not candidates for surgery or chemoradiation. Toxicities were manageable.
- OBP-301 may sensitize the infected tumor cells to radiation.
- In addition, OBP-301 may also potentiate systemic anti-tumor immune responses, which may also prevent distant spreading.

# Trial Design for NRG-GI007



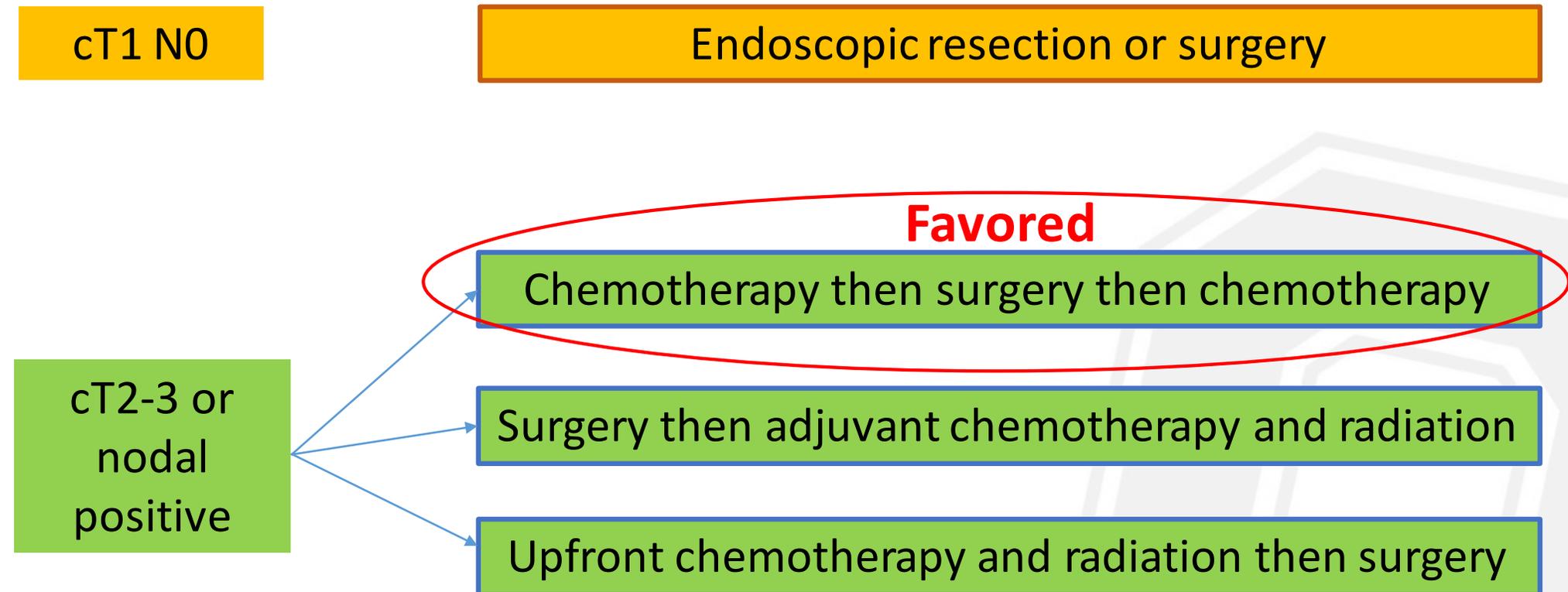
## Inclusion criteria

- Adenocarcinoma of the esophagus or GEJ within 90 days prior to registration.
- Performance Status of 0-1.
- Must have a tumor that is amenable to intra-tumoral injection.
- Patients must, in the opinion of a thoracic surgeon and/or multidisciplinary team, not be a candidate for surgery but are candidates for chemoradiation.
- Patients must have adequate blood, kidney, and liver function.

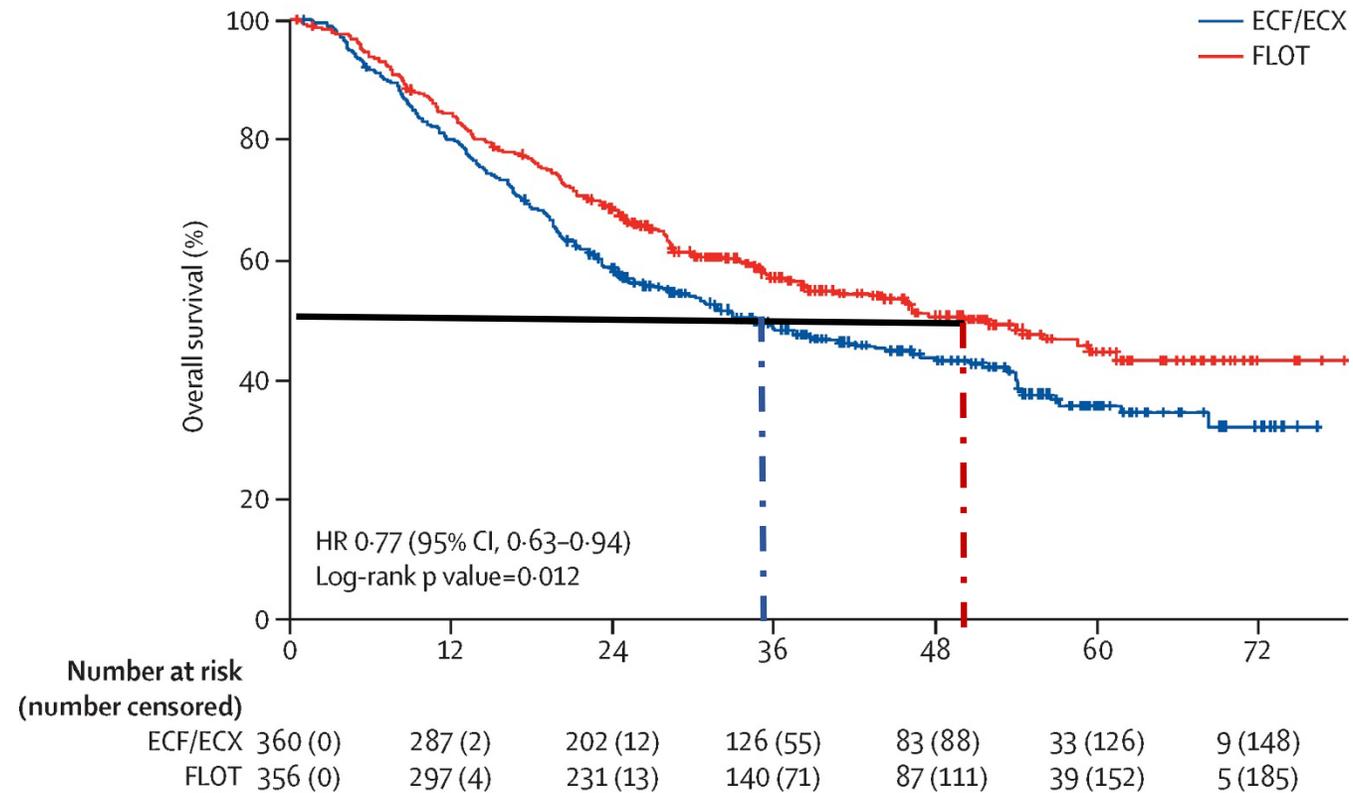
**Please consult your treating physician, if you are recently diagnosed with locally advanced E/GEJ cancer to consider this trial enrollment!**

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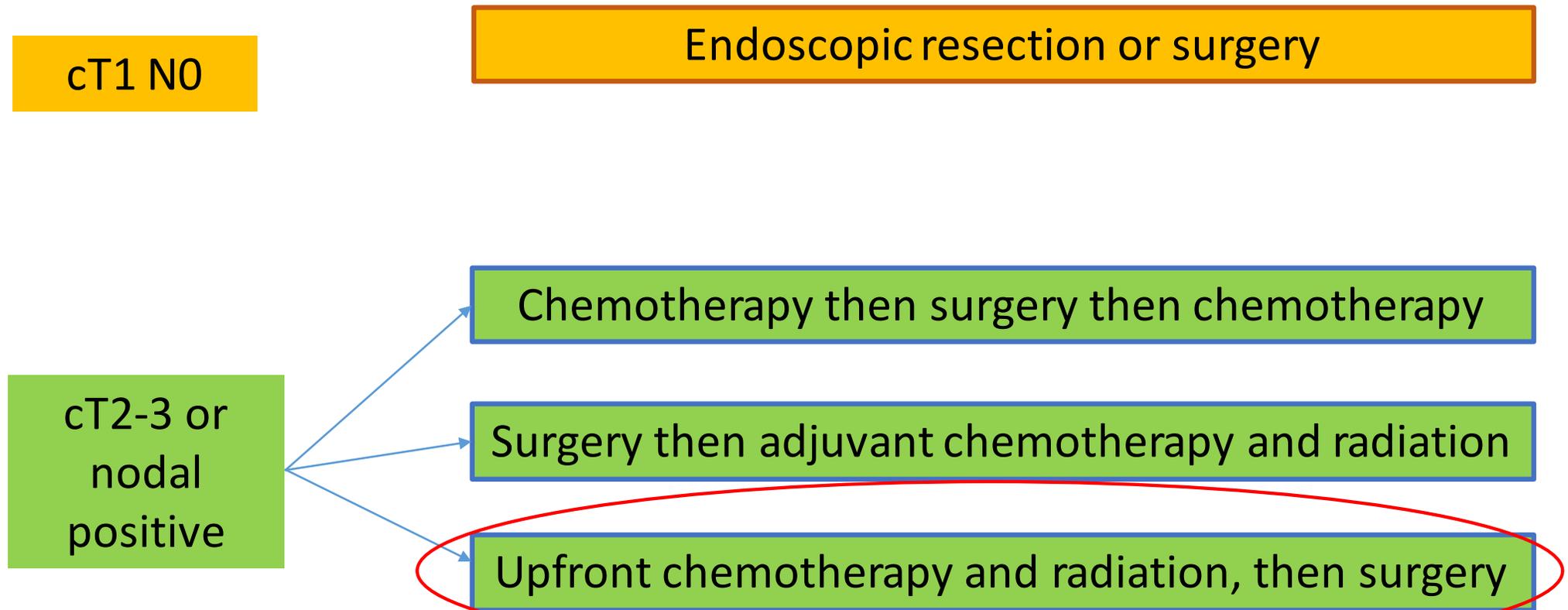
# Current Treatment for Gastric Cancer in the US



# Current Standard Care for Peri-operative Chemotherapy in Gastric Cancer (FLOT4)



# Ongoing Research for Gastric Cancer at the James



**Research Interest**

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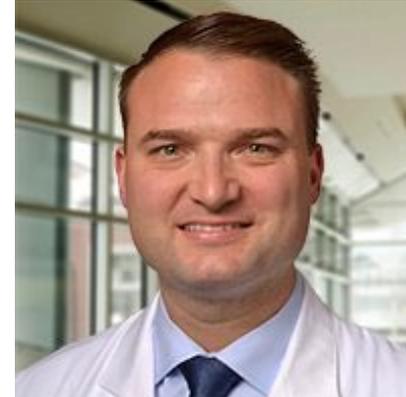
# Total Neoadjuvant Therapy for the Treatment of Gastroesophageal Junction (GEJ) and Gastric Cancers



Dr. Ning Jin  
Medical Oncology



Dr. Dayssy A. Diaz  
Radiation Oncology



Dr. Jordan Cloyd  
Surgical Oncology



Dr. Michael Knopp  
Radiology

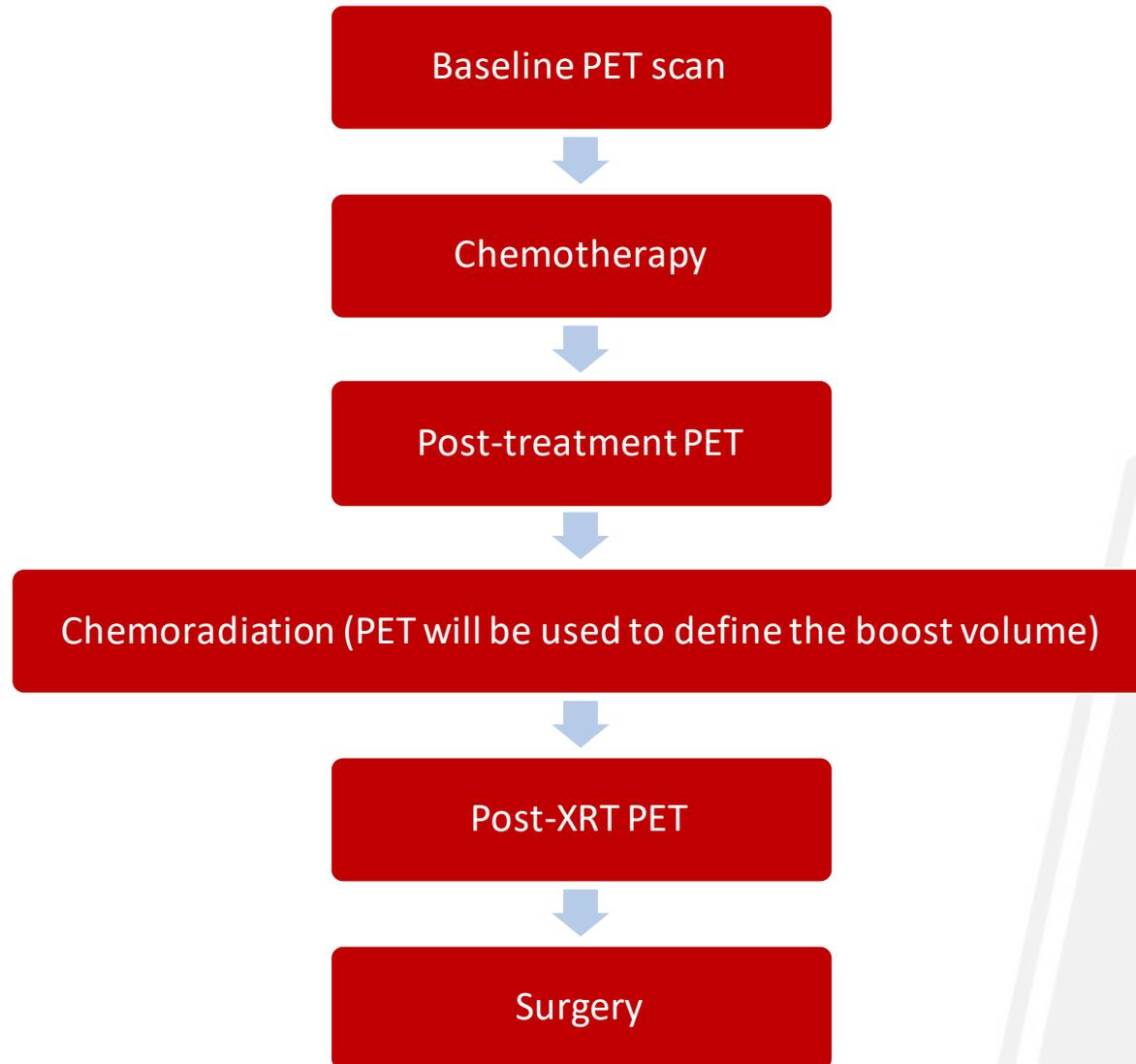


Dr. Chadwick Wright  
Radiology

# Rationale: Total Neoadjuvant Therapy for the Treatment of Gastroesophageal Junction (GEJ) and Gastric Cancers

- Chemotherapy prior to surgery can improve outcome in gastric cancer.
- Postoperative chemoradiation can improve outcome compared to surgery alone in gastric cancer.
- Chemotherapy and chemoradiation before surgery will ensure adequate treatment delivery and may be feasible in gastric cancer.
- The use of digital PET imaging to adapt treatment volumes has the potential to decrease radiation toxicity.

# Trial Design of Total Neoadjuvant Therapy in GEJ and Gastric Cancer



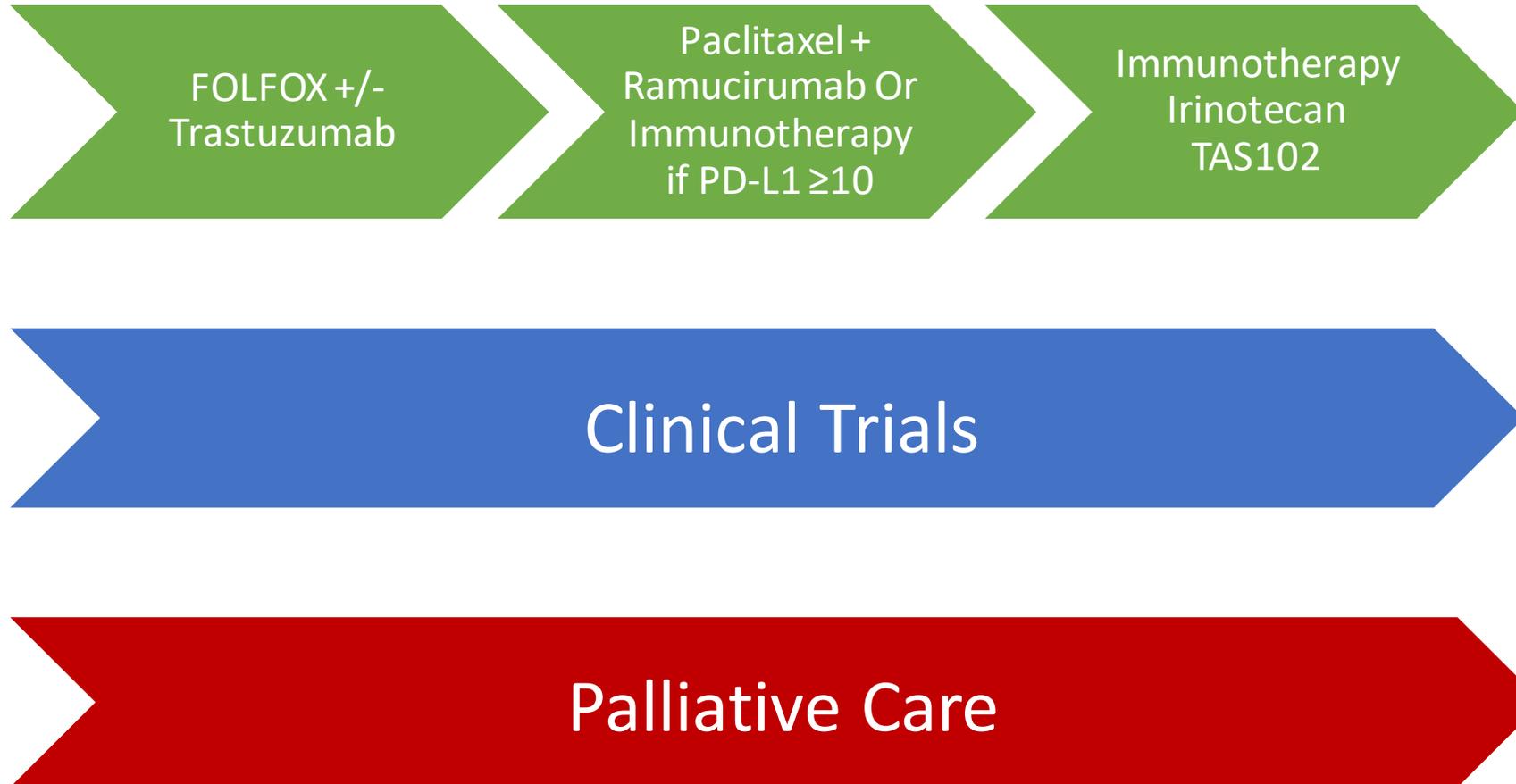
## Inclusion criteria

- Patients with biopsy proven, cT2N0-T4aN3M0 (TNM 8th edition), gastric or GEJ adenocarcinoma.
- Evaluation with EUS and staging laparoscopy prior to enrollment is strongly recommended.
- Patients should be  $\geq 18$  years old.
- ECOG performance status  $\leq 2$ .
- Patients must have adequate blood, kidney, and liver function.

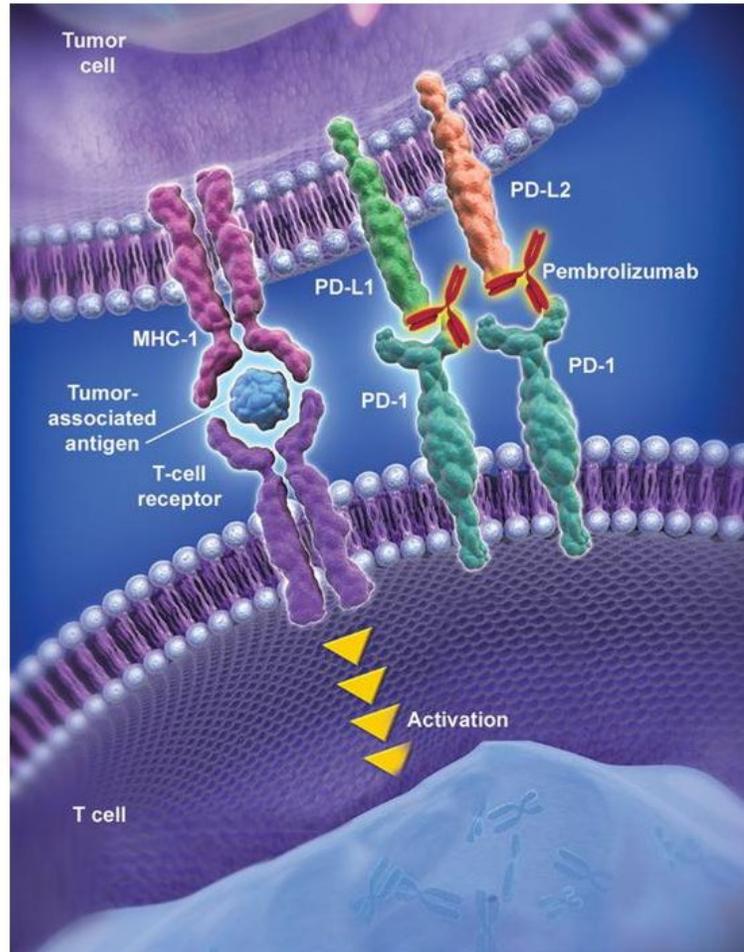
**Please consult your treating physician, if you are recently diagnosed with locally advanced gastric cancer to consider this trial enrollment!**

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# Systemic Therapies for Metastatic (Stage IV) Esophageal, GEJ and Gastric Cancers



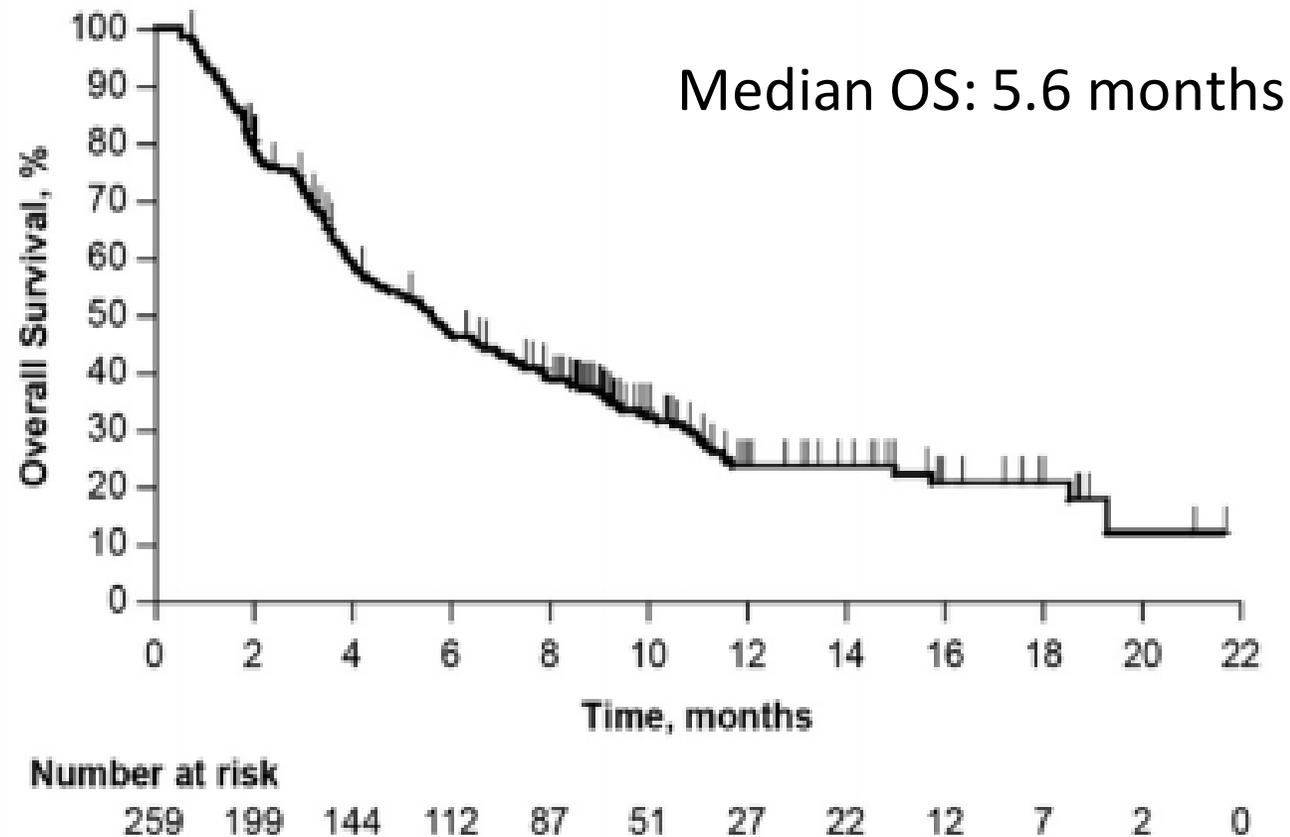
# Immunotherapy in Upper GI Cancers



- PD-L1 expression on tumor cells suppresses immune surveillance, permitting tumor growth.
- Pembrolizumab is a humanized antibody that
  - Binds to PD-1 with high affinity, preventing PD-1 from binding to its ligands
  - Has demonstrated robust antitumor activity and manageable toxicity in multiple cancers

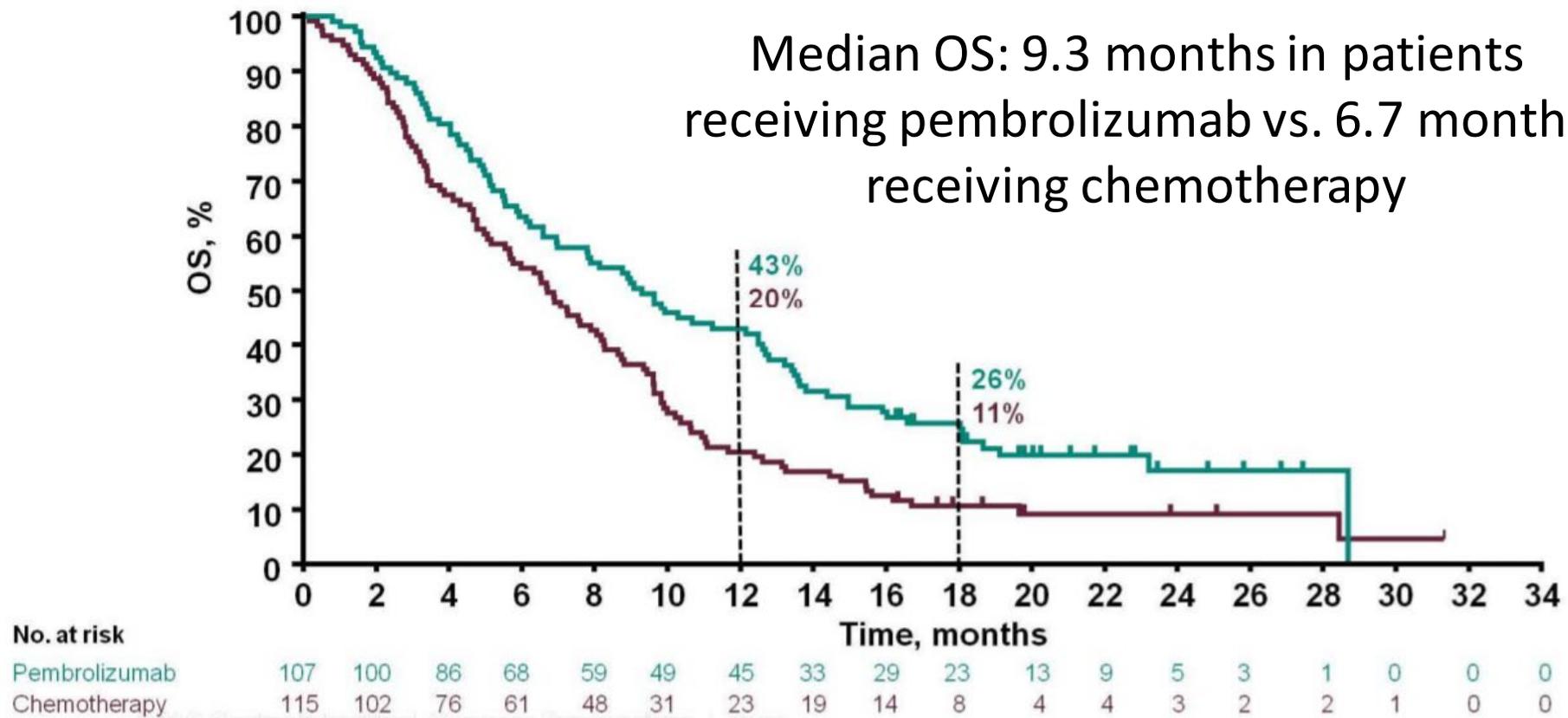
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# Pembrolizumab is Approved in Third Line for Patients with GEJ and Gastric Adenocarcinomas with PD-L1 $\geq 1$



# Pembrolizumab is Approved in Second Line for Patients with Esophageal Squamous Cell Carcinoma with PD-L1 $\geq 10$

## Overall Survival (PD-L1 CPS $\geq 10$ )





## Conclusion

- The treatment of gastroesophageal cancer is complex with unfavorable clinical outcomes
- At James, we have developed a multi-disciplinary team to conduct clinical trials to improve the treatment efficacy in upper GI cancers
- Immunotherapy holds promise in this field

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# Thank You

To learn more about Ohio State's cancer program, please visit [cancer.osu.edu](http://cancer.osu.edu) or follow us in social media:



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