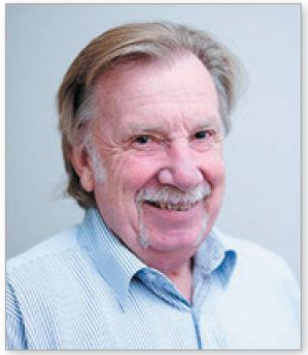
## Ms Lynley Gulasekharam

Clinical Nurse Specialist Lung Cancer Care Coordinator

MidCentral Health, Palmerston North



## Dr Chris Atkinson

Director & Consultant Radiation Oncologist

St Georges Cancer Care Centre

Christchurch

## Dr Greg Frazer

Respiratory Physician

Christchurch Hospital

Christchurch

## Dr Bernie Fitzharris

Consultant Medical Oncologist

St Georges Cancer Care Centre

Christchurch

Friday, August 09, 2019 (Room 2)

16:30 - 18:30 WS #53: Lung Health Forum (120mins, not repeated)

# SYSTEMIC TREATMENT OF LUNG CANCER

Christchurch

Bernie Fitzharris 9th August 2019

TUAPAPA PŪKAHUKAHU
LUNG FOUNDATION
New Zealand

# Conflicts of Interest

- Part time private practice
- Part time consultant to MSD
- Part time consultant to AstraZenaca
- PHARMAC NPPA application reviewer
- Some international meeting accommodation support from Roche

# CANCER REGISTRATIONS NZ 2013

| Female | | Male | |
|---|---|---|---|
| breast | 3020 | prostate | 3129 |
| colorectal | 1453 | colorectal | 1622 |
| melanoma | 1140 | melanoma | 1226 |
| lung | 1005 | lung | 1032 |

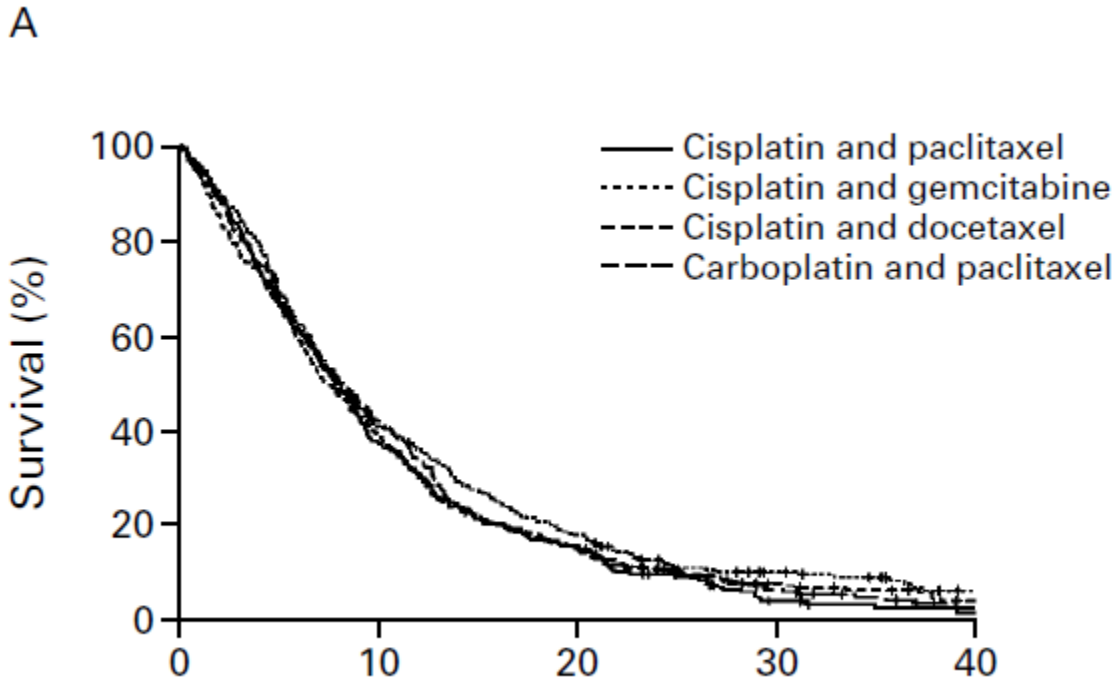
# CAUSES OF CANCER DEATH NZ 2013

| Female | | Male | |
|---|---|---|---|
| lung | 792 | lung | 864 |
| breast | 663 | colorectal | 659 |
| colorectal | 593 | prostate | 647 |
| pancreatic | 248 | melanoma | 232 |

# LUNG CANCER

- different pathological subtypes
- non small cell lung carcinoma 85%
- newer targeted treatments more effective for NSCLC
- leading cause of cancer death worldwide

# Chemotherapy ended in 2002




N Engl J Med, Vol. 346, No. 2 January 10, 2002

# Targeted Therapy

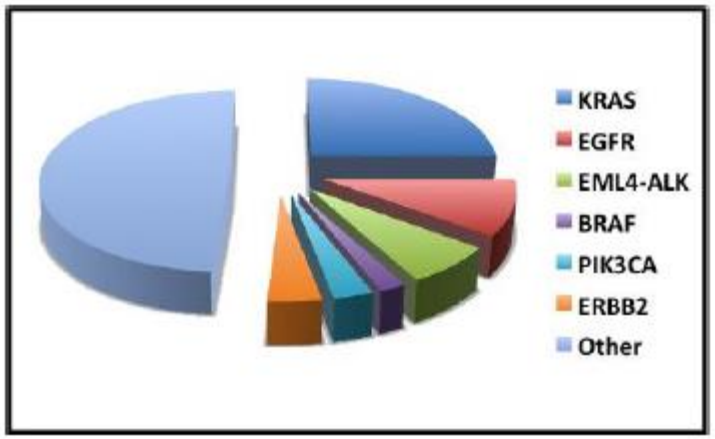

HO

# Targeted Cancer Treatment Is Not New

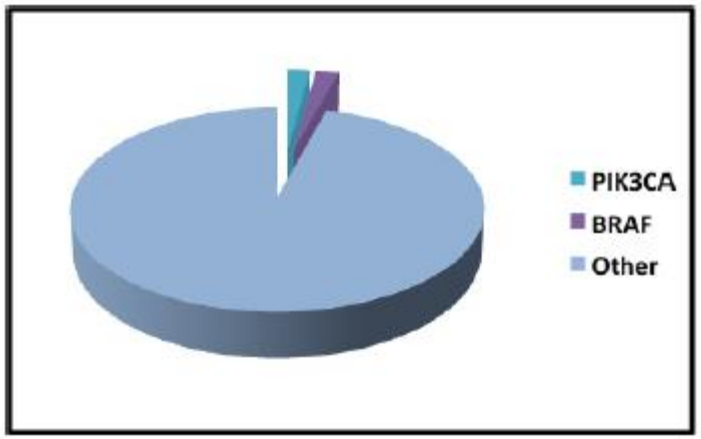
# Breast Cancer

- tamoxifen
- aromatase inhibitors
- trastuzumab (Herceptin)
- lapatinib
- pertuzumab
- trastuzumab emtansine (Kadcyla)

## Current state of knowledge of targetable alterations in lung adenocarcinoma versus squamous cell lung cancer




Lung adenocarcinoma

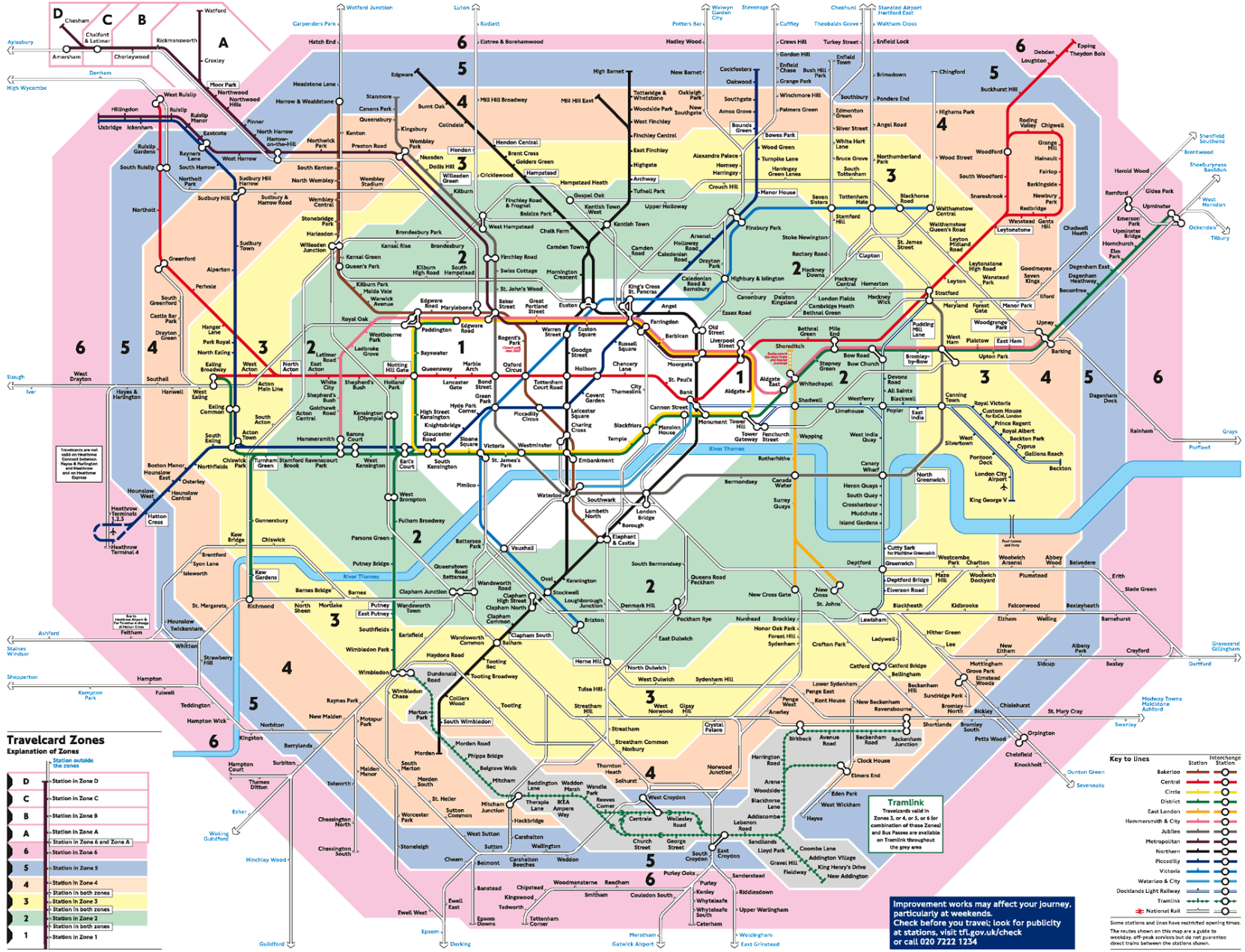



Lung squamous cell carcinoma

- Compared to lung adenocarcinoma, for which many targeted treatments are available, there are no genomically-targeted therapies for lung squamous carcinomas…and few targets

# Adenocarcinoma Lung

- gefitinib
- erlotinib
- crizotinib
- alectinib




MAYOR OF LONDON

24 hour travel information 020 7222 1234

Website tfl.gov.uk

Textphone 020 7918 3015

Transport for London

# PRACTICAL POINTS (1)

- Test for driver mutations
- EGFR 15% (Asian up to 60%)
- ALK 4%
- ROS-1 1-2%

# PRACTICAL POINTS (2)

- most patients wont have a driver mutation
- Check for PD-L1 staining in tumour
- If PD-L1 “positive” consider immunotherapy +/- chemotherapy

# PRACTICAL POINTS (3)

- PDL-1 staining <1% - chemotherapy or best supportive care
- PD-L1 staining 1%-50% PD-L1 inhibitor + chemotherapy
- PD-L1 staining > 50% immunotherapy alone

# PD-L1 BLOCKERS

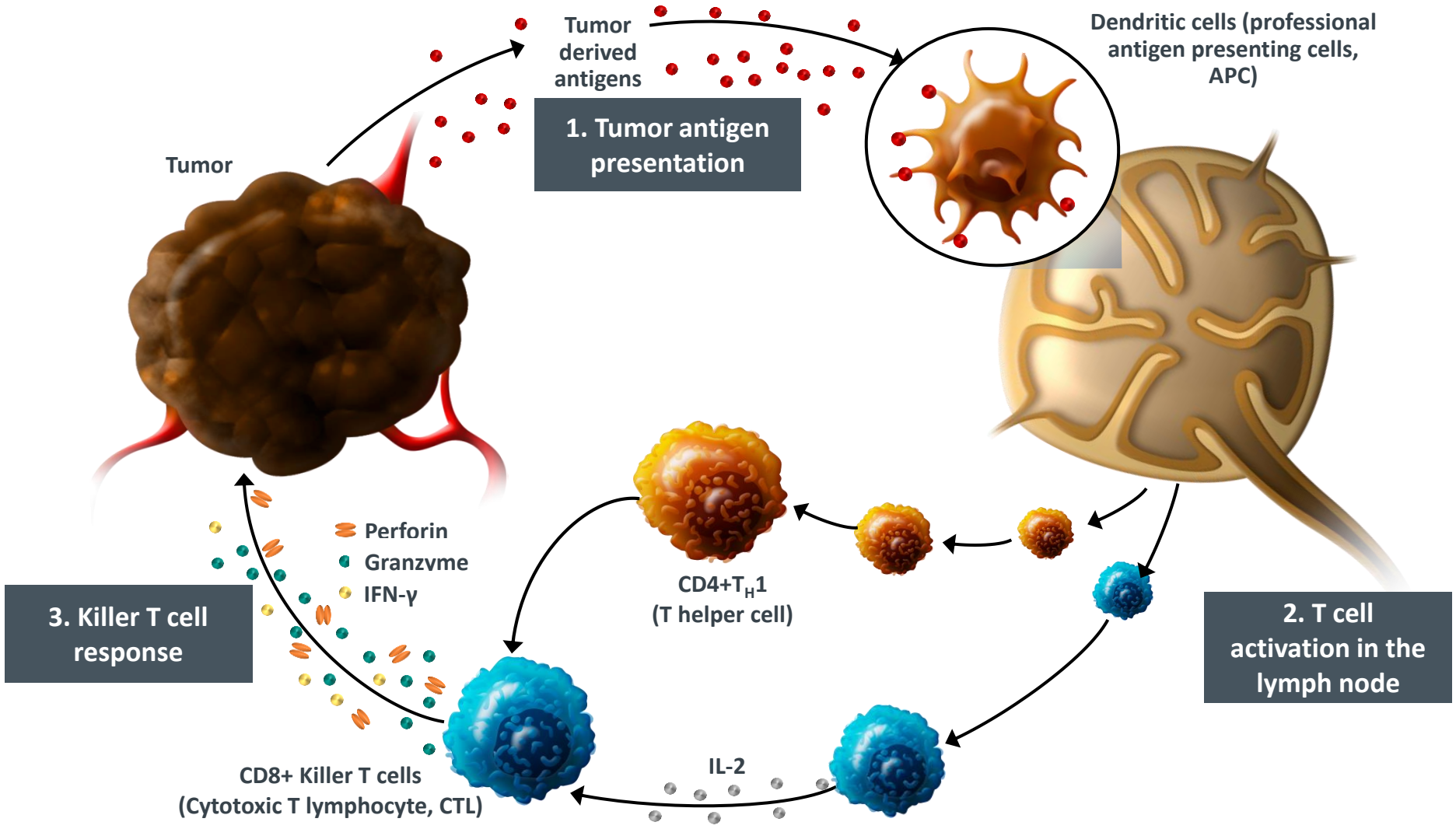
- pembrolizumab (Keytruda) PD-1 blocker
- nivolumab (Opdivo) PD-1 blocker
- atezolizumab (Tecentriq) PD-L1 blocker

# OUTCOMES (1)

- Historically stage IV 5 year survival 5%
- pembrolizumab response rate 45% vs chemotherapy 28%
- 6 month overall survival 80% vs 72%
- median duration of response not yet reached vs 6.3 months
- ranges 1.9+ to 14.5+ months vs 2.1+ to 12.6+ months

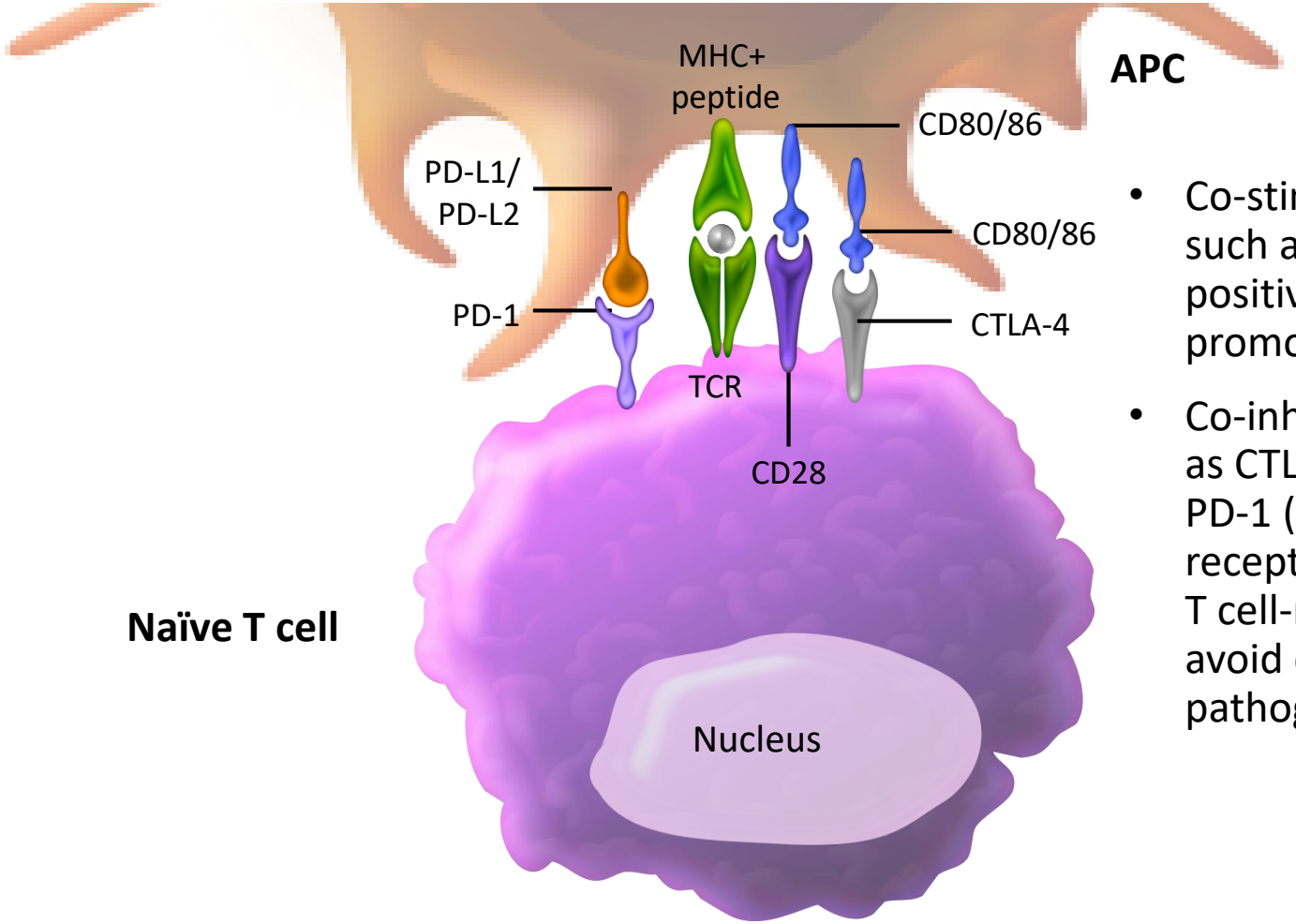
# OUTCOMES (2)

- oral small molecule TK inhibitor responses less durable than immunotherapy
- median response several months
- BUT can then proceed to immunotherapy in many patients



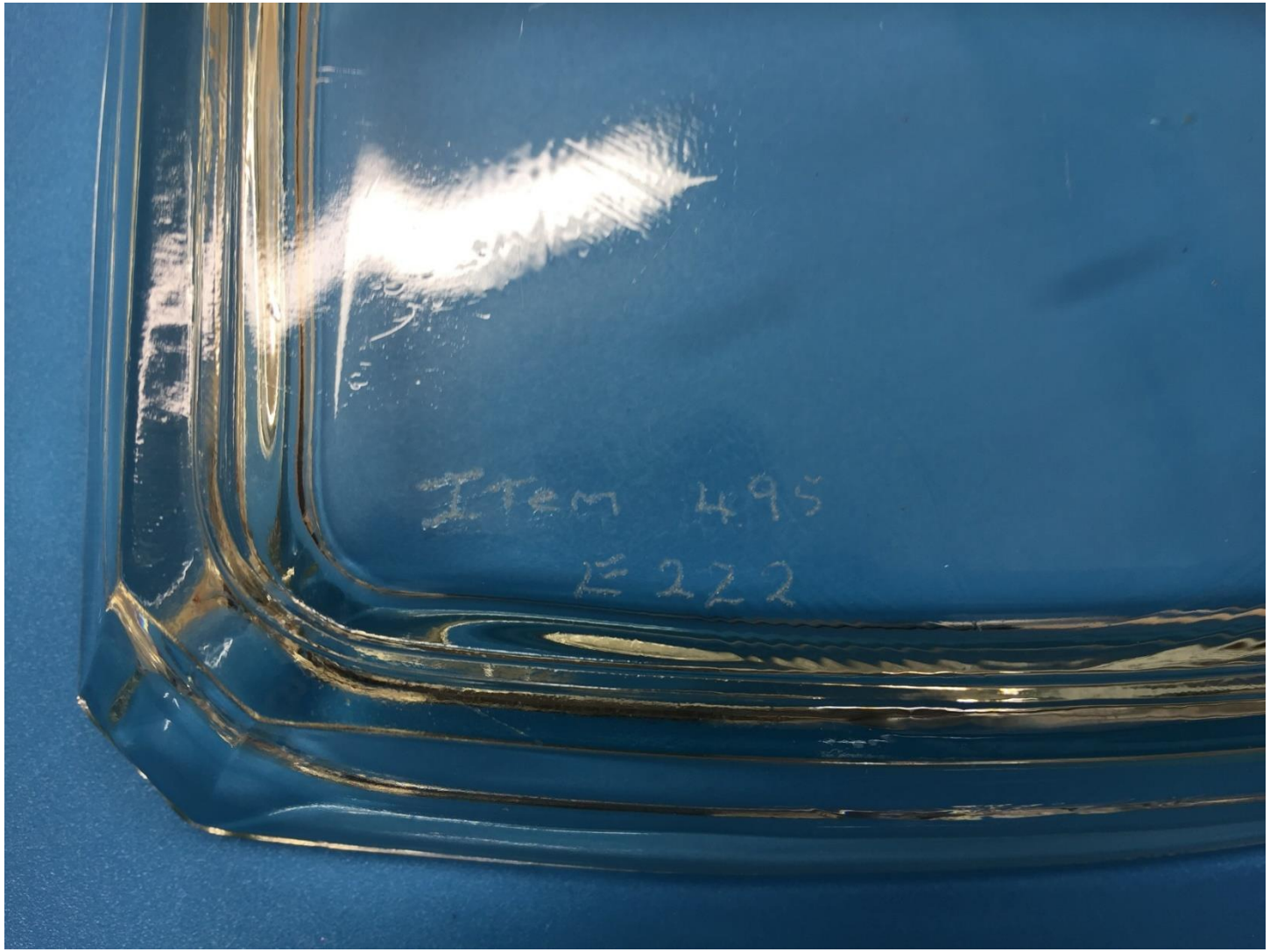

1. Motz GT et al. *Immunity*. 2013;39:61–73. 2. Chen DS et al. *Immunity.* 2013;39:1–10. 3. Pardoll DM. *Nat Rev Cancer*. 2012;12:252–64. 4. Janeway CA, et al. *Immunobiology*. 6th ed. New York and London: Garland Science; 2004:341-342.
5. Liu CC et al. *N Engl J Med*. 1996 ;335:1651-1659. 6. Mellman I et al. *Nature*. 2011;480:480-489.

# Regulation of T Cell Function: Multiple Co-stimulatory and Inhibitory Pathways[1,2]




- Co-stimulatory molecules such as CD80/86 and CD28 positively regulate or promote immune response
- Co-inhibitory molecules such as CTLA-4 and PD-1 (immune checkpoint receptors) normally dampen T cell-mediated responses to avoid damage to self during pathogenic infection

1. Adapted from Sznol M et al. *Clin Cancer Res.* 2013;19:1021–1034.
2. Pardoll DM. *Nat Rev Cancer.* 2012; 12:252–264.


Item 495
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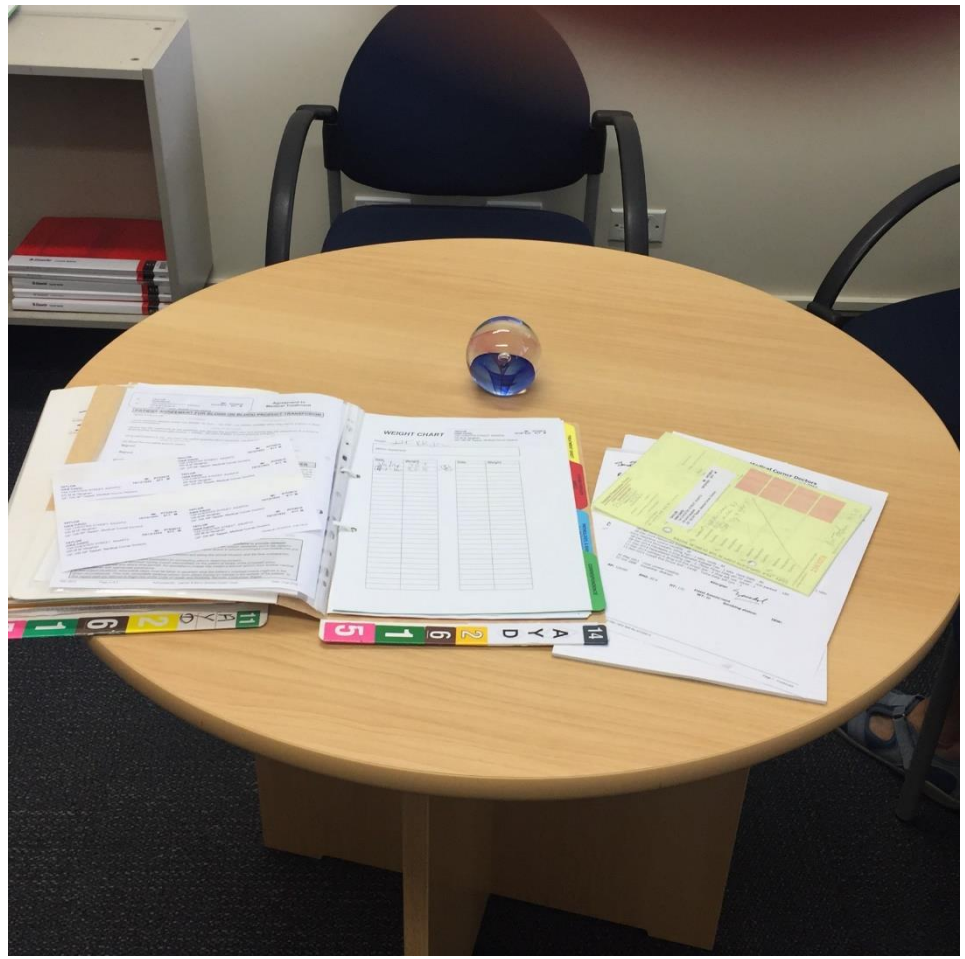
WEIGHT CHART