

**WET HOT**  
**AMERICAN**  
**SUMMER**

**Natalie Stokes | Cardiology Fellow**  
**2020 Internal Medicine Teaching Competition**



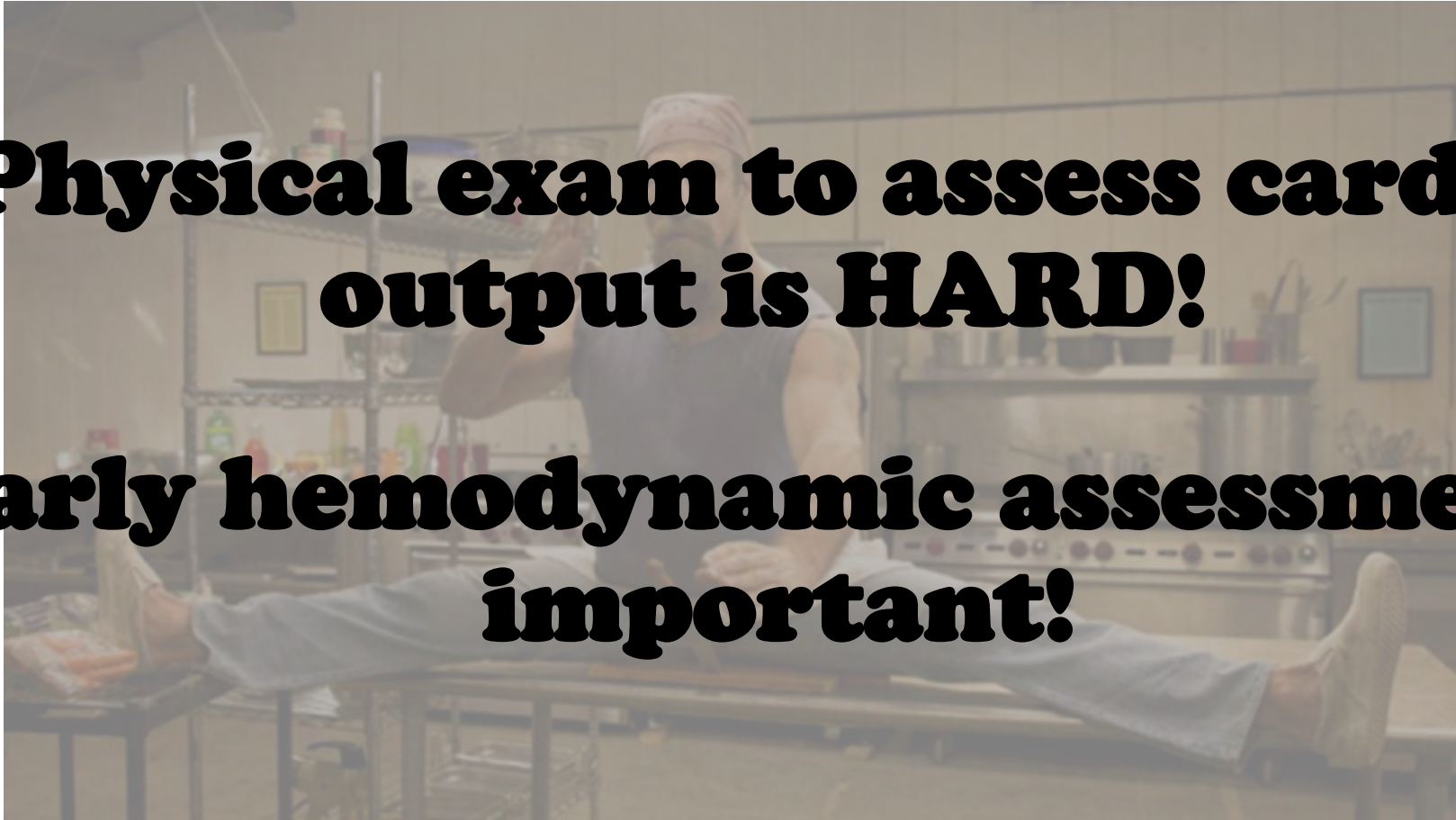
# **CARDIAC OUTPUT:**

**Measuring Cardiac Output-  
summer camp style**



# **WHAT'S MY PATIENTS CARDIAC OUTPUT?**

- Physical exam to assess cardiac output is HARD!**
- Early hemodynamic assessment is important!**



Hemodynamics:

HGB: 12g/dl

Heart Rate: 63BPM

RM AIR REST

AO: 131/71 98

RA: 19/16 15

RV: 86/15 19

PA: 90/33 51

PW: 28/22 15

Thermal CO: 3.19 Thermal CI: 1.62

Fick CO: 4.01 Fick CI: 2.04

PA Sat: 55

PA Sat: 55

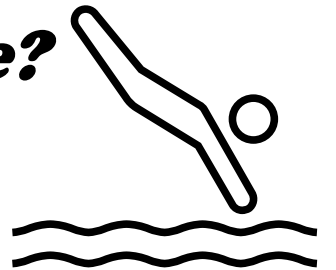


# CARDIAC OUTPUT VIA RHC

## TWO METHODS: THERMODILUTION & FICK



***Why do they often differ & what should I believe?***



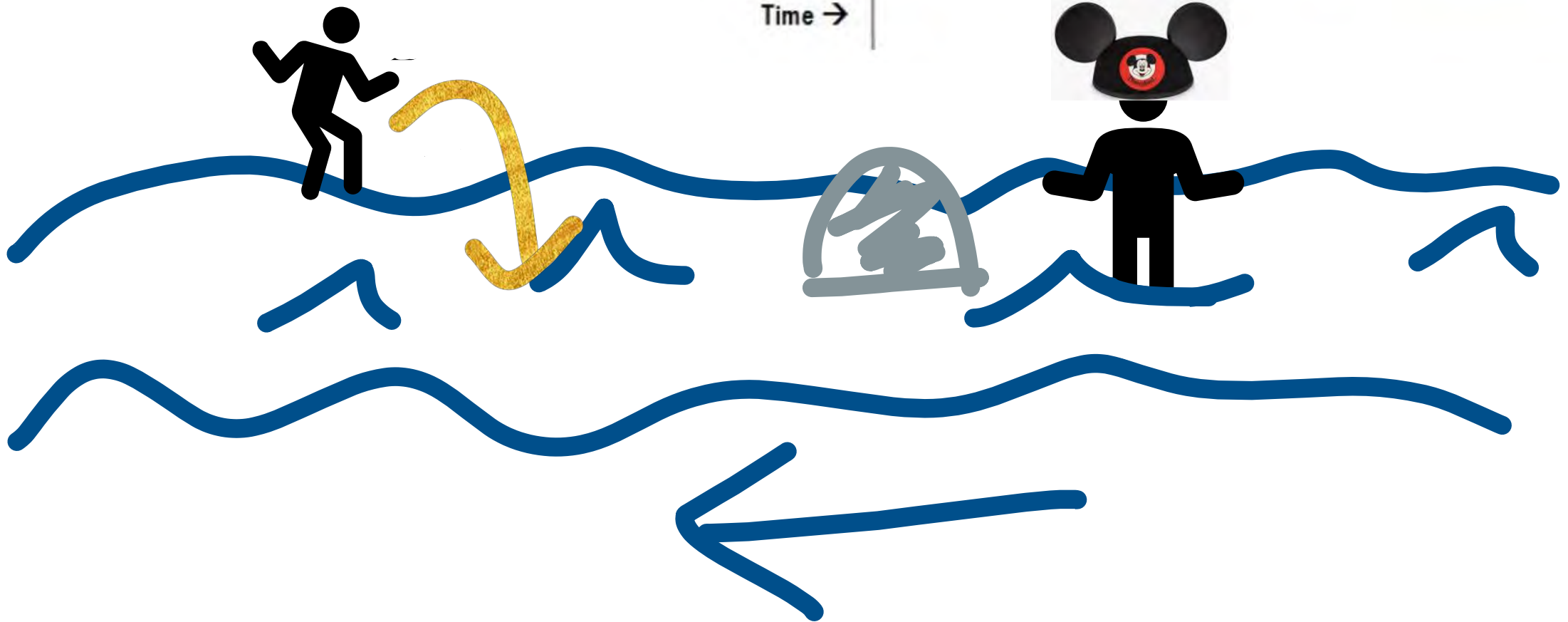
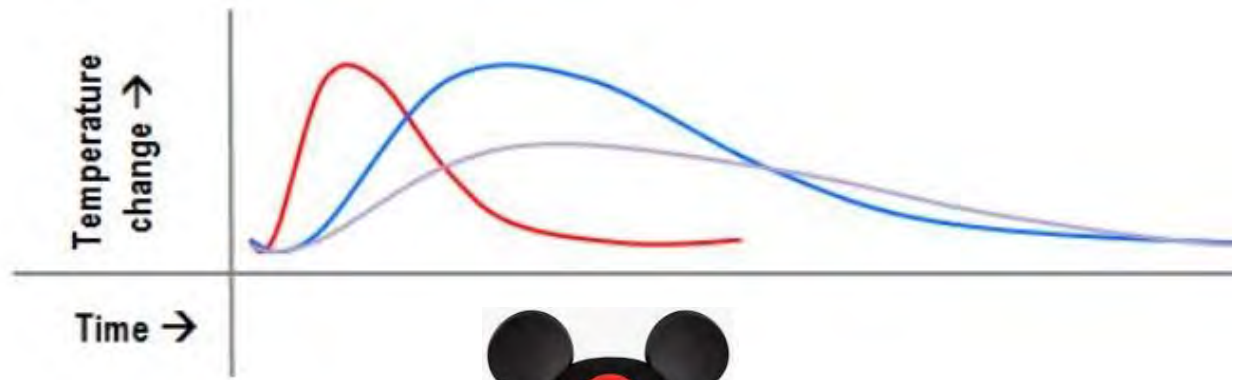


**Thermodilution:  
Don't pee in the  
water**

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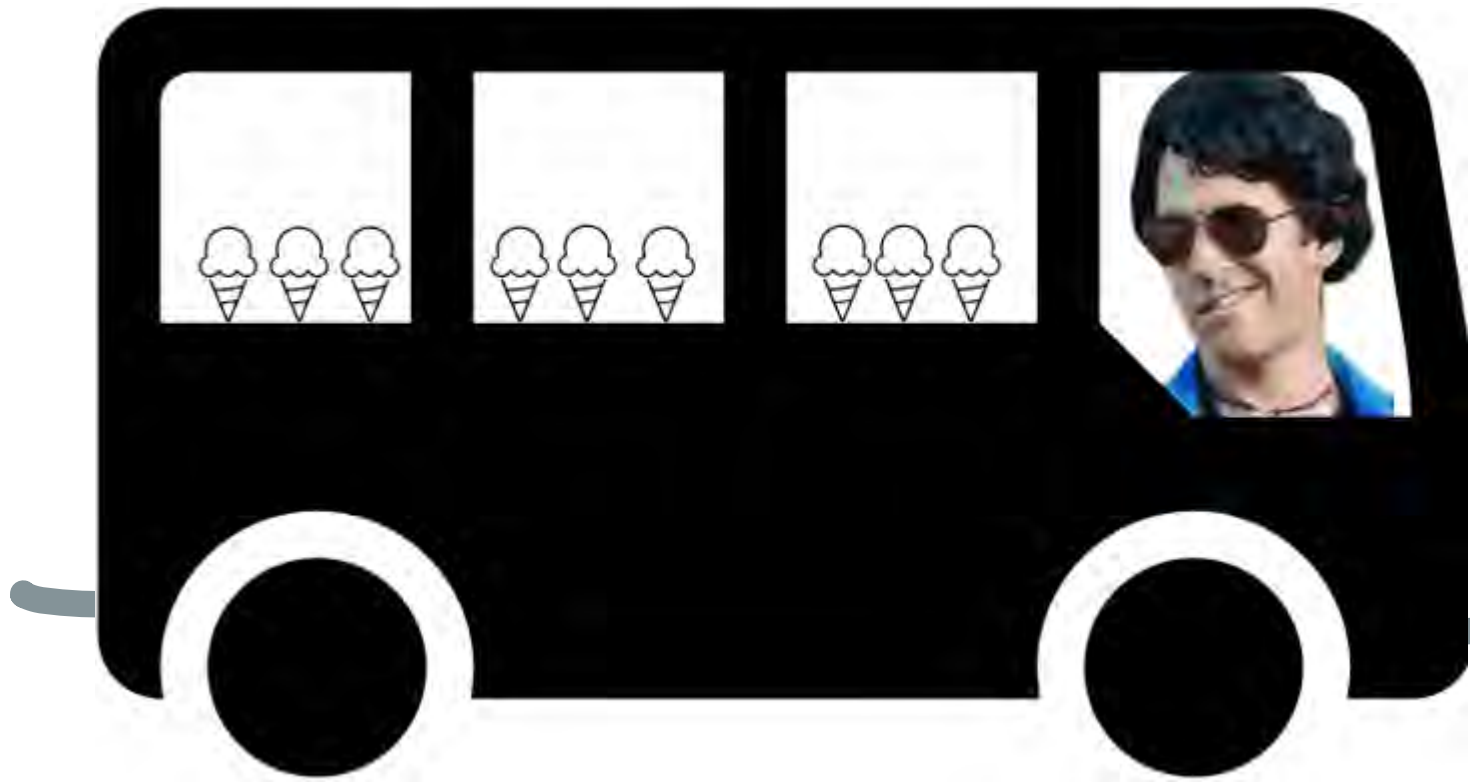


**Fick: Ice  
Cream time!**

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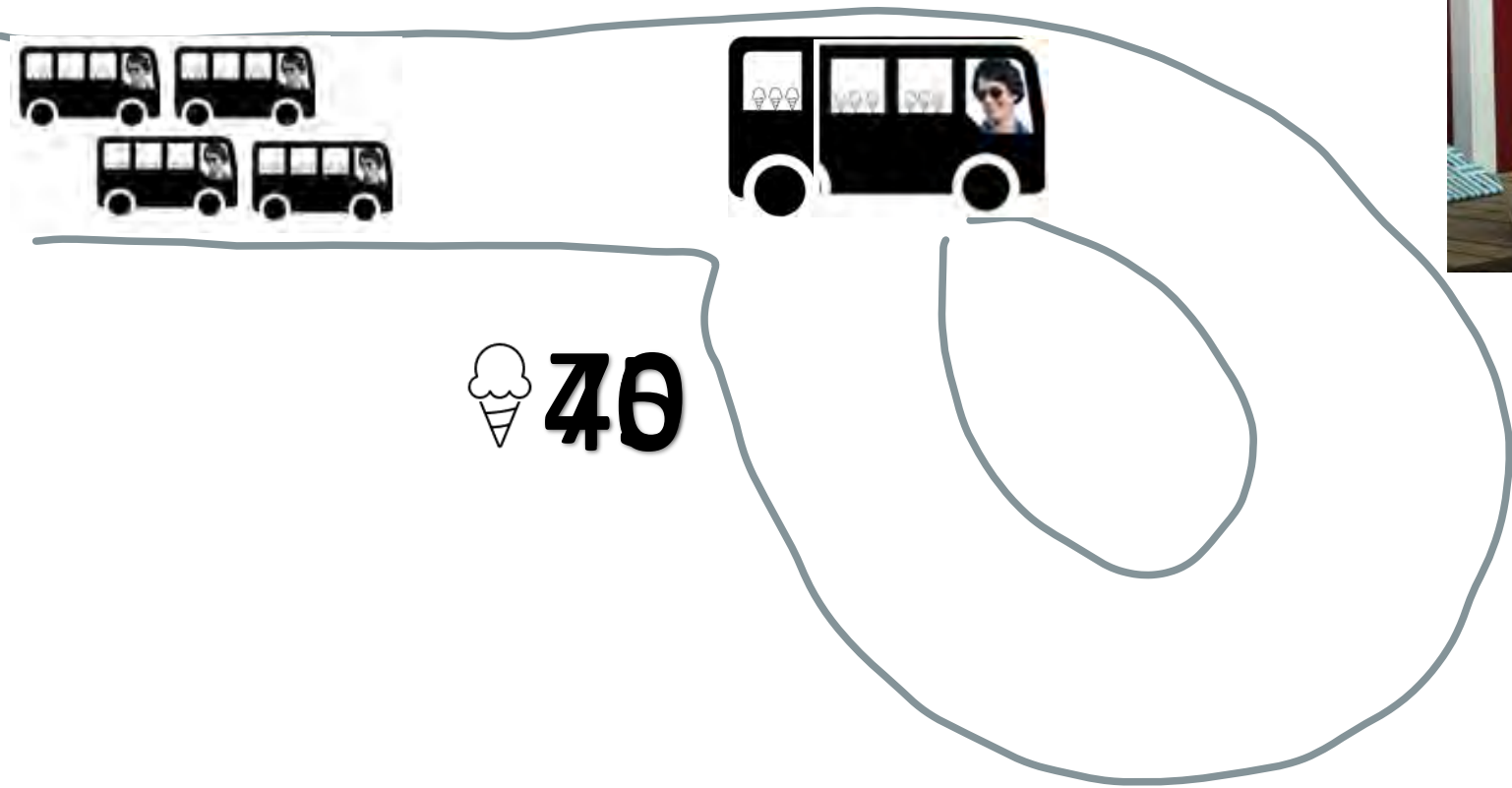








 1000



 40





# TAKE HOME POINTS:



- **When physical exam is unclear, use RHC to assess CO**
- **Thermodilution depends on the measured temperature change in the pulmonary artery catheter**
  - **Pitfalls: TR, temperature, operator, position**
- **Fick method depends on the principle of tissue oxygen extraction**
  - **Variables: assumptions, SaO<sub>2</sub>, PaO<sub>2</sub>, hemoglobin**





**QUESTIONS?**

